

Fig. 21

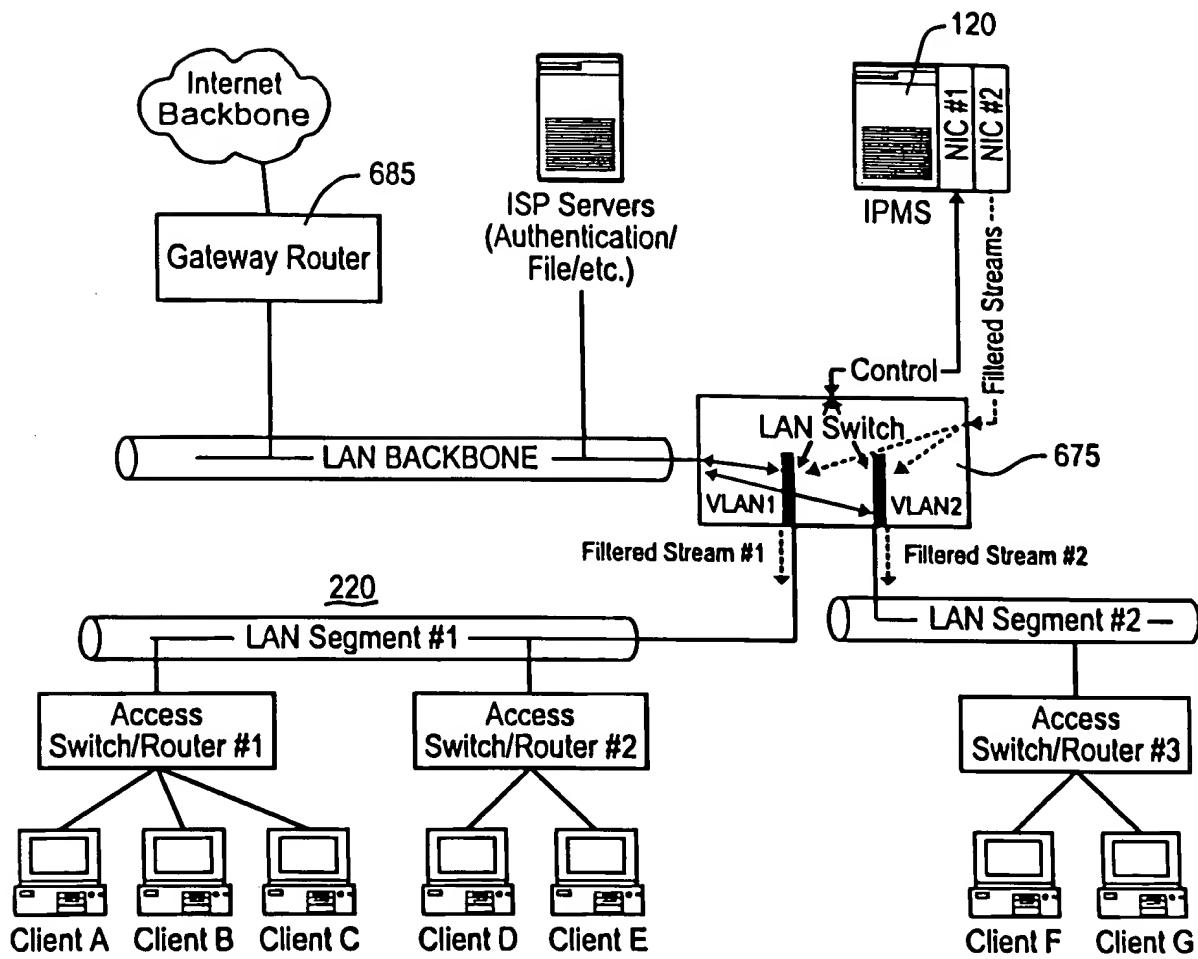


Fig. 22

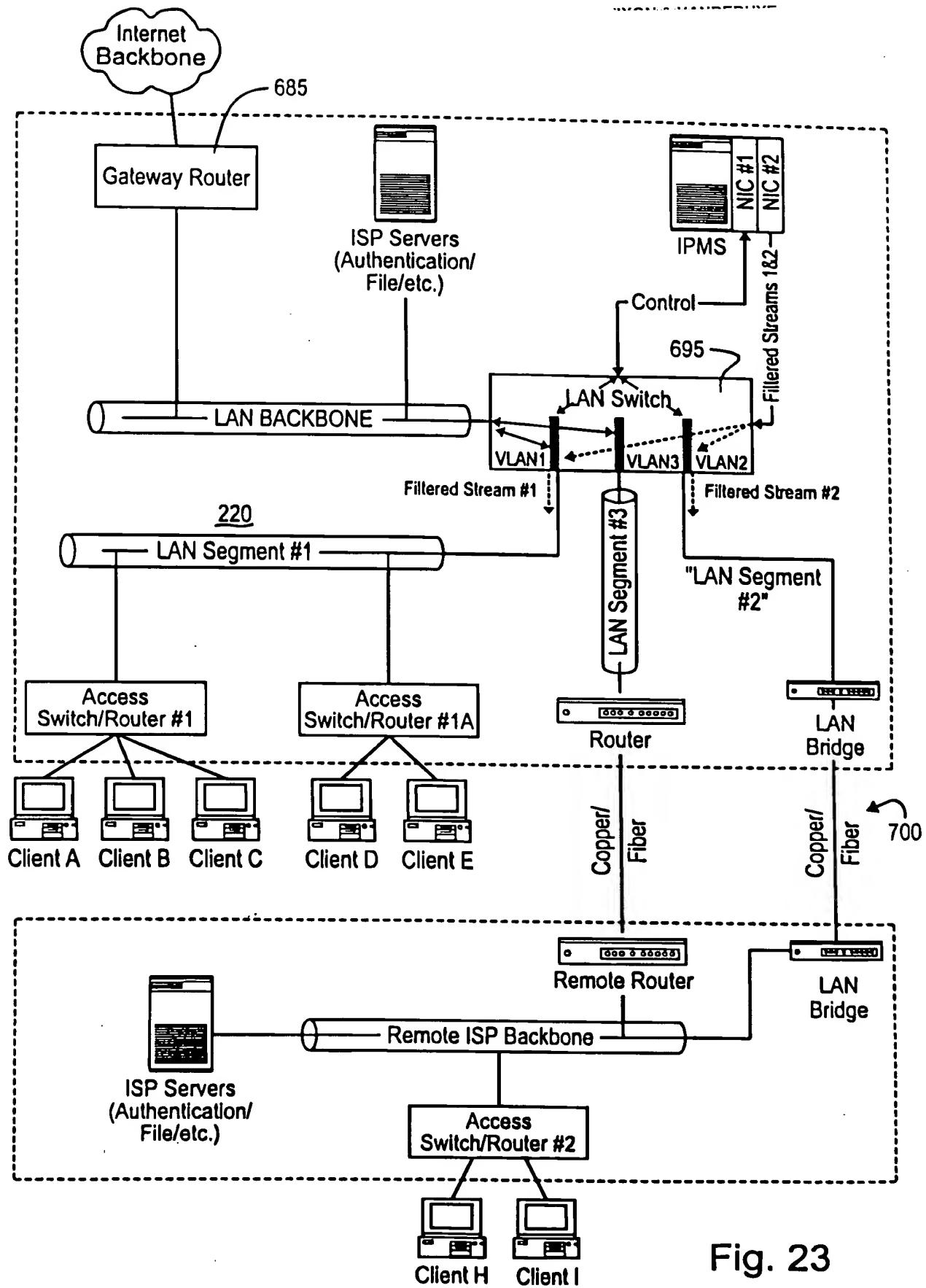


Fig. 23

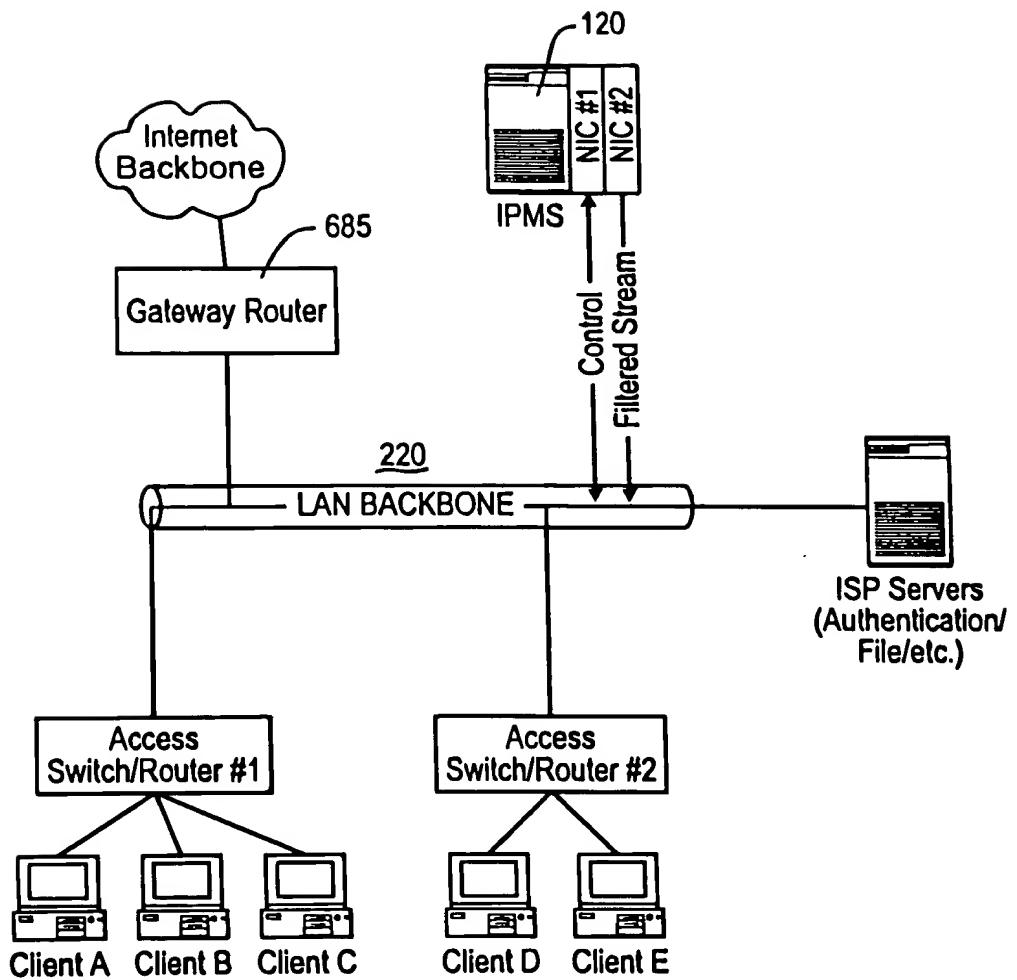


Fig. 24

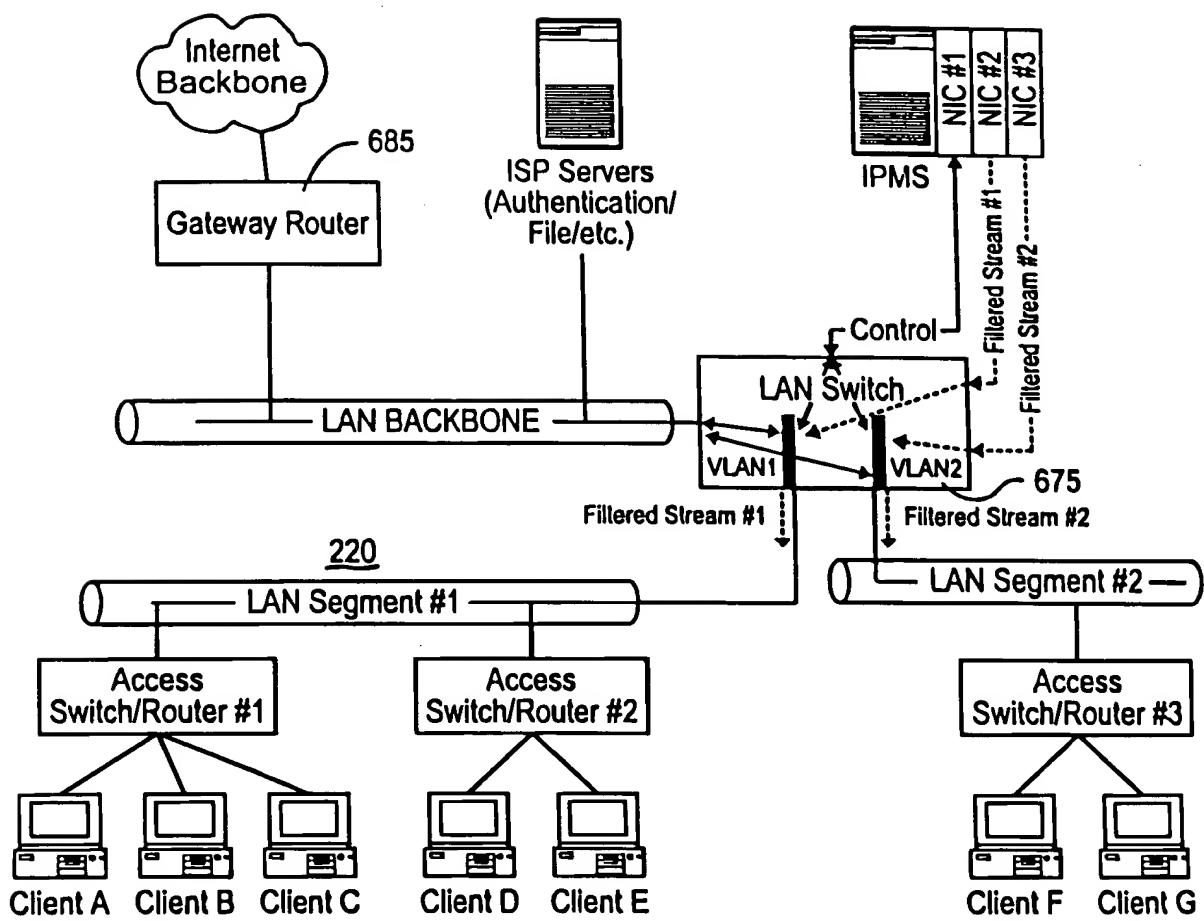


Fig. 25

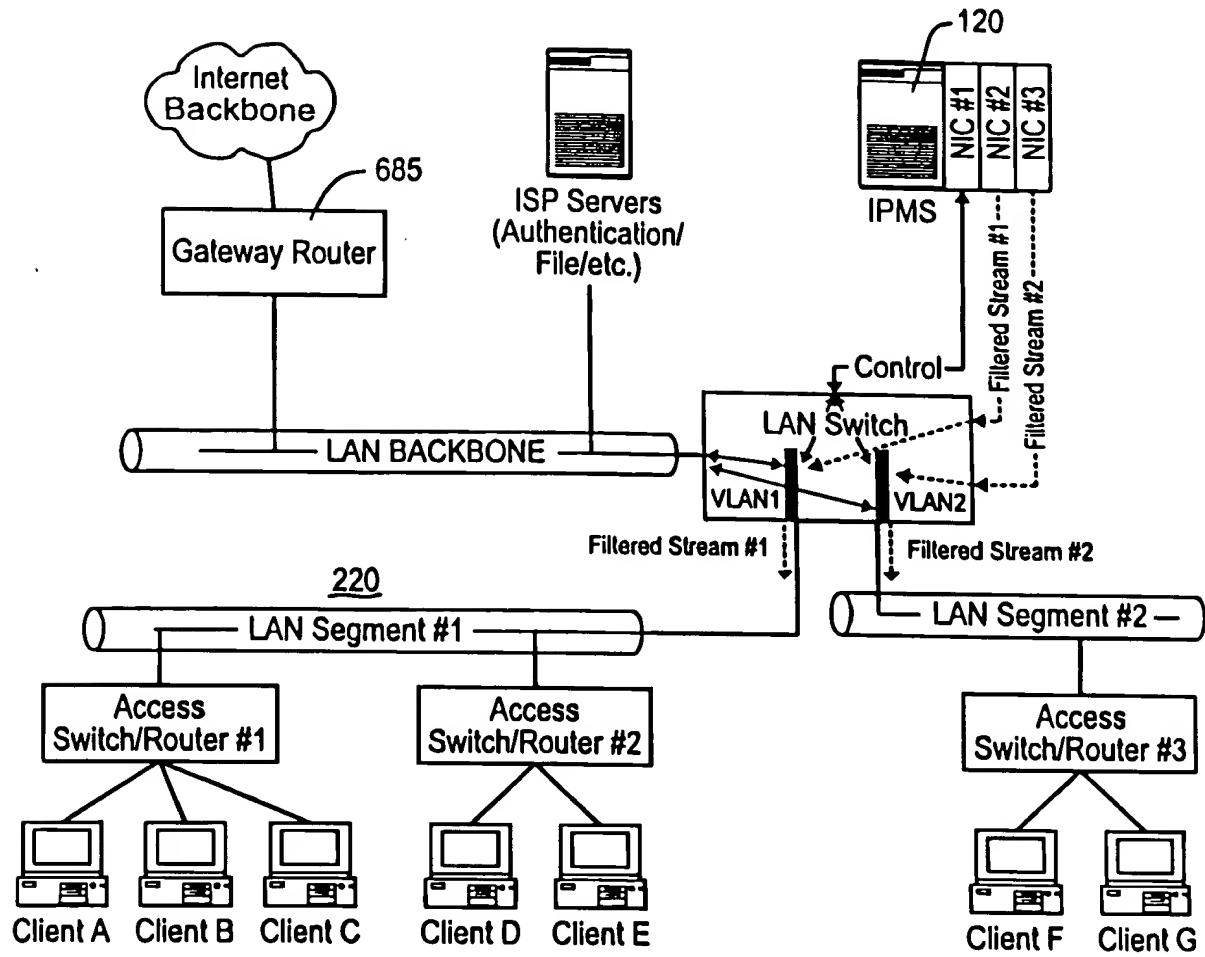


Fig. 26

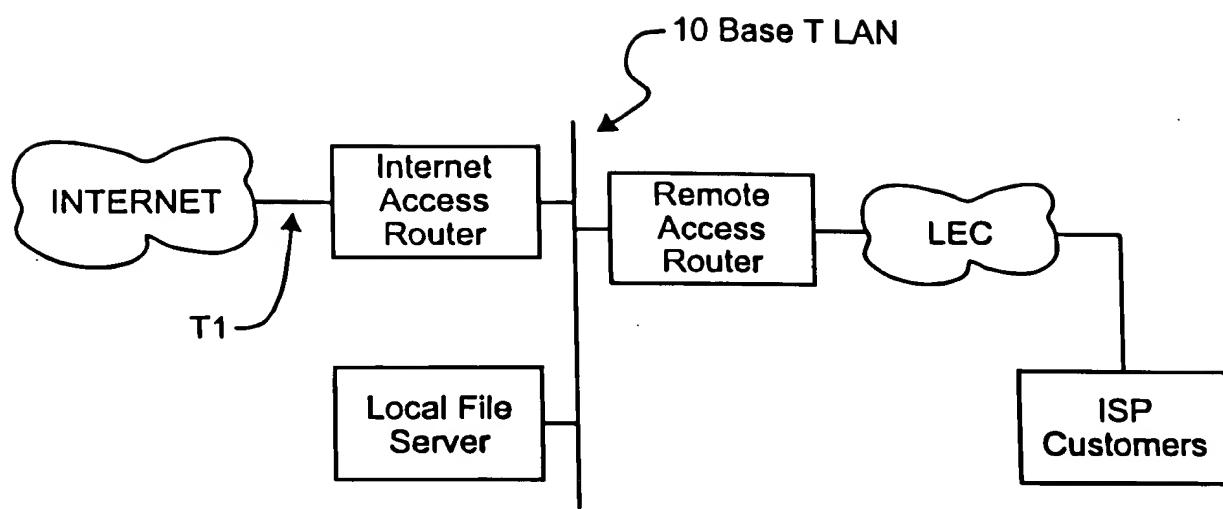


Fig. 27

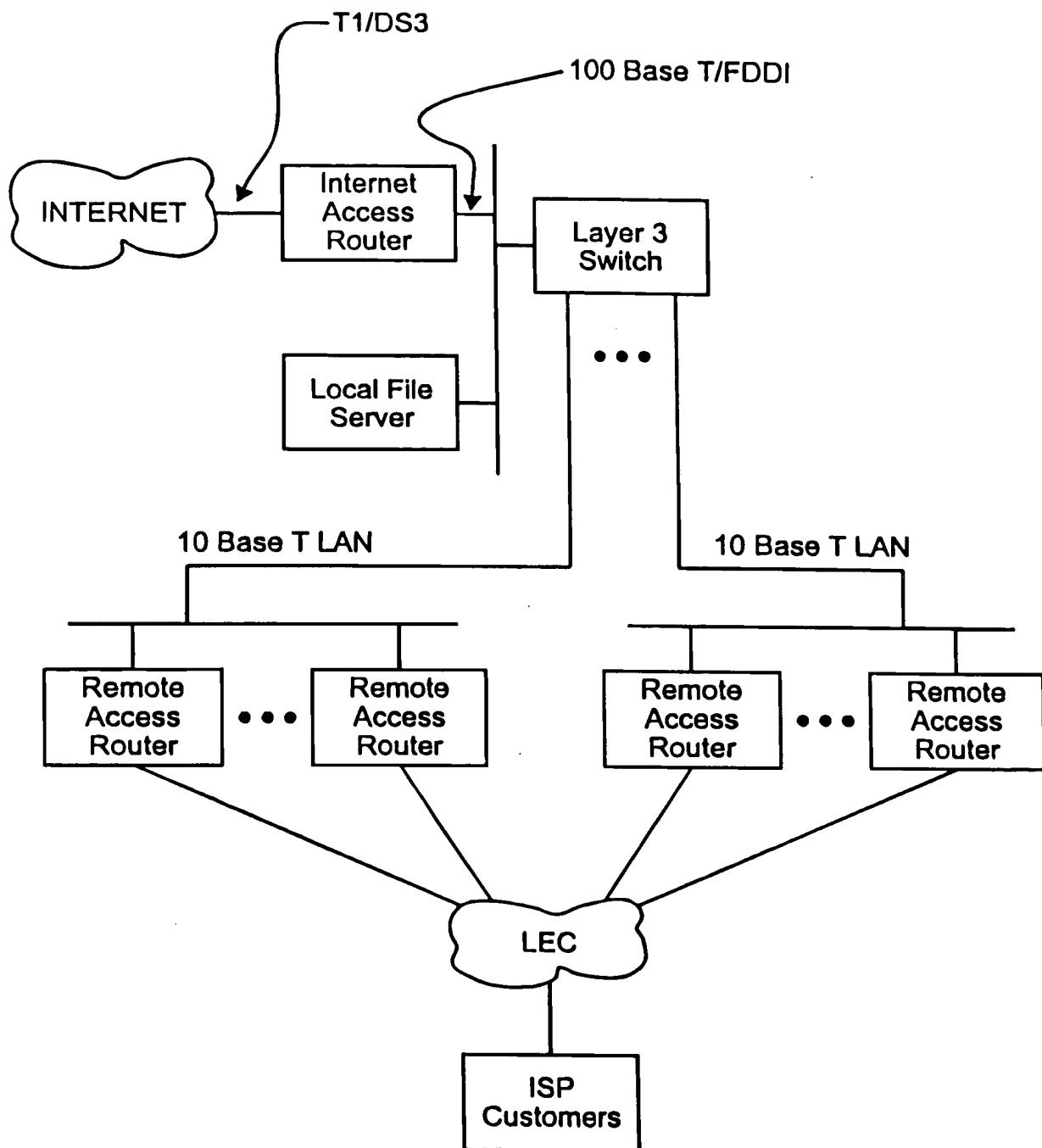


Fig. 28

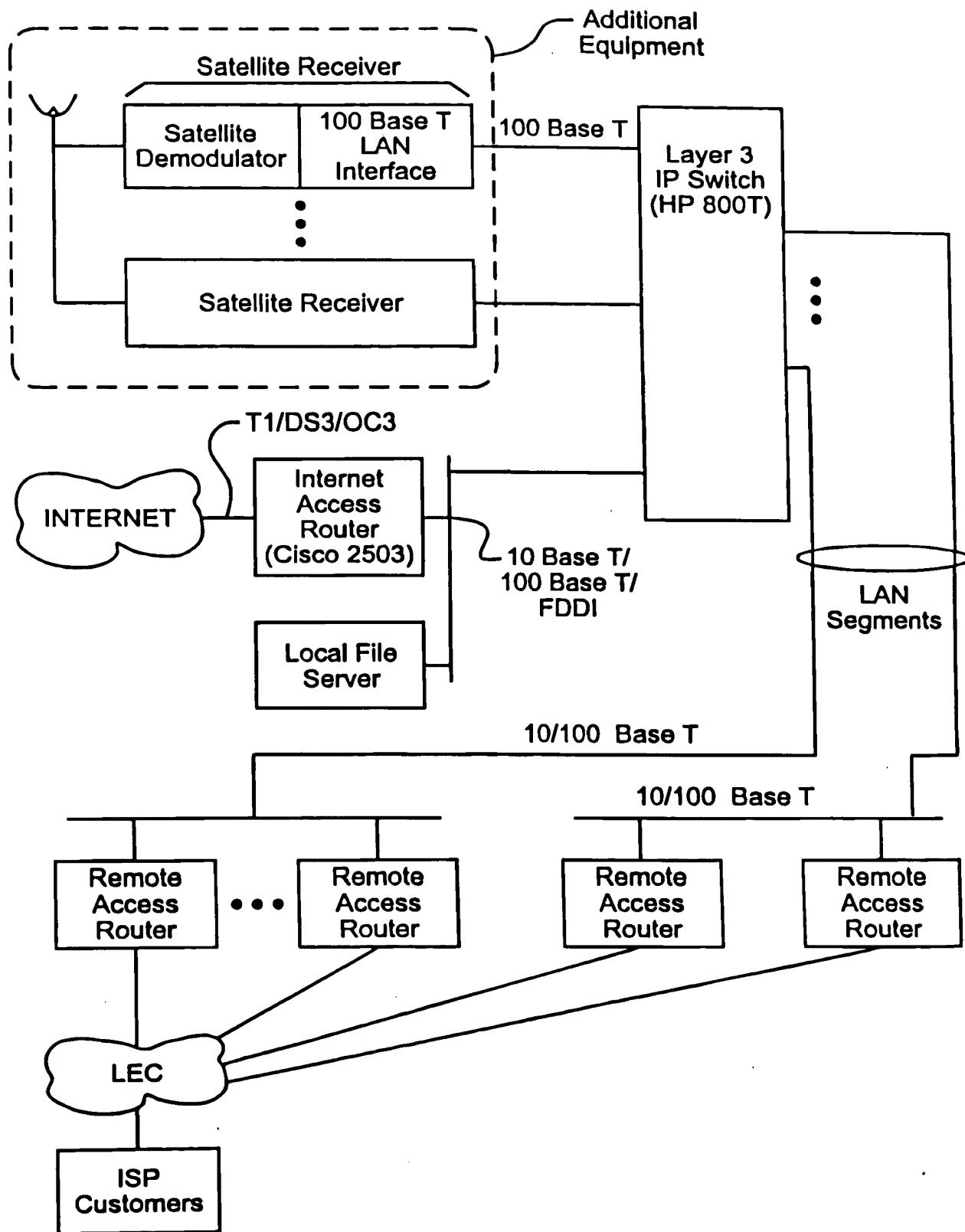


Fig. 29

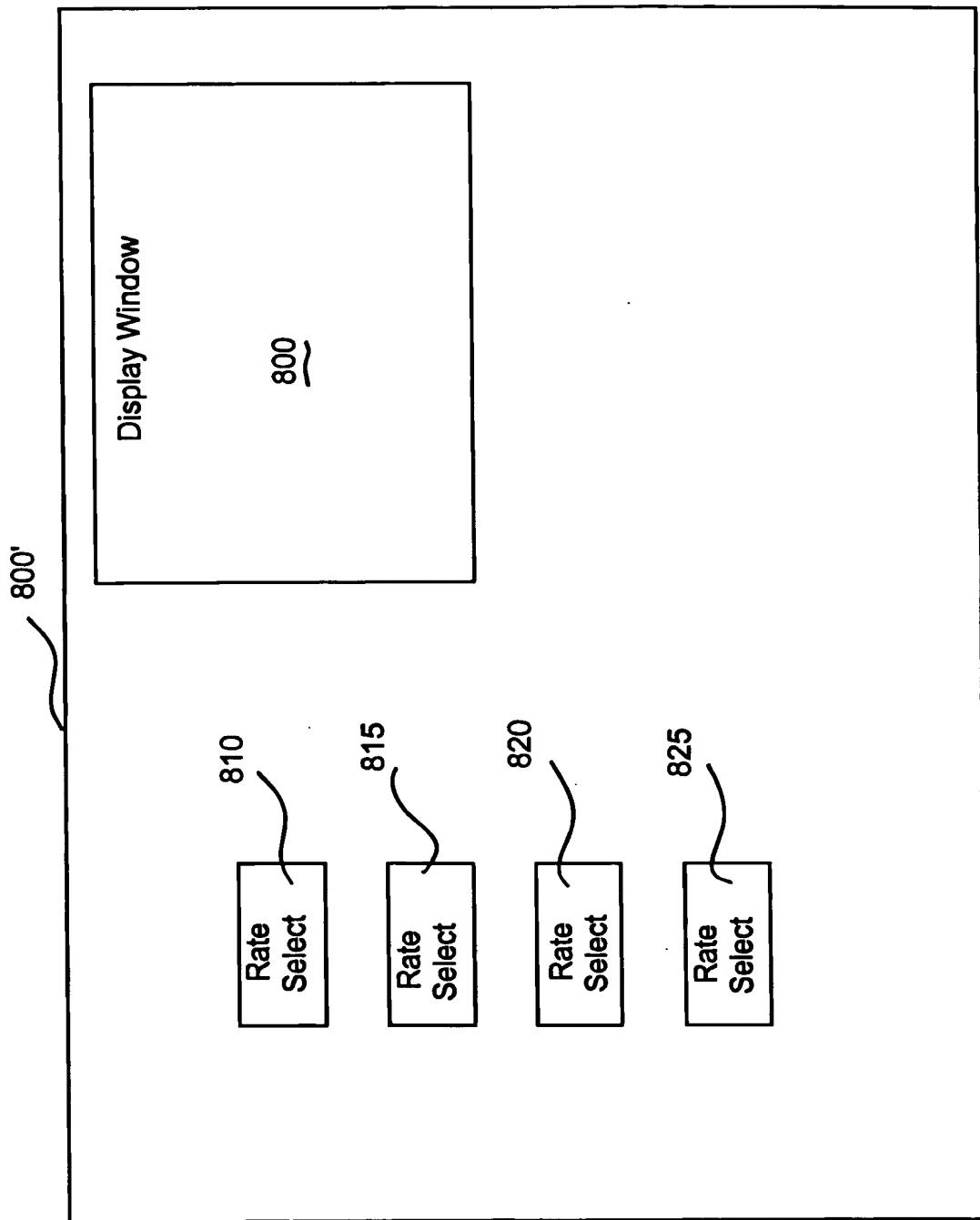
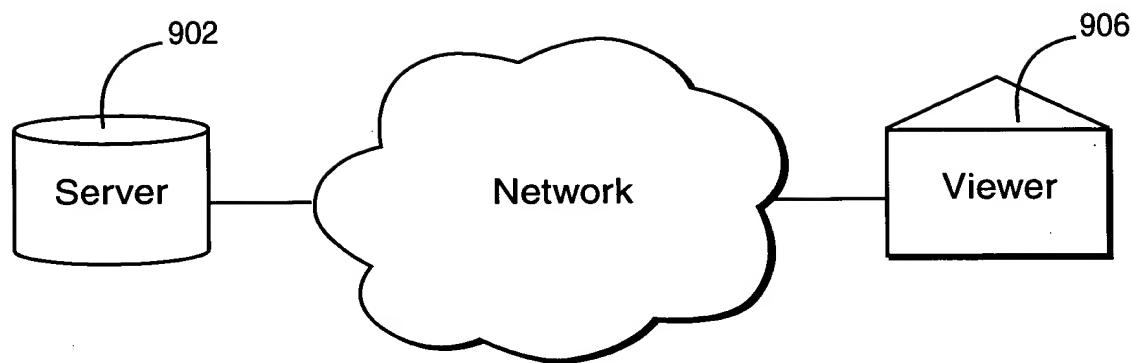


Fig. 30



**Fig. 31**  
Example IP Data Content Distribution

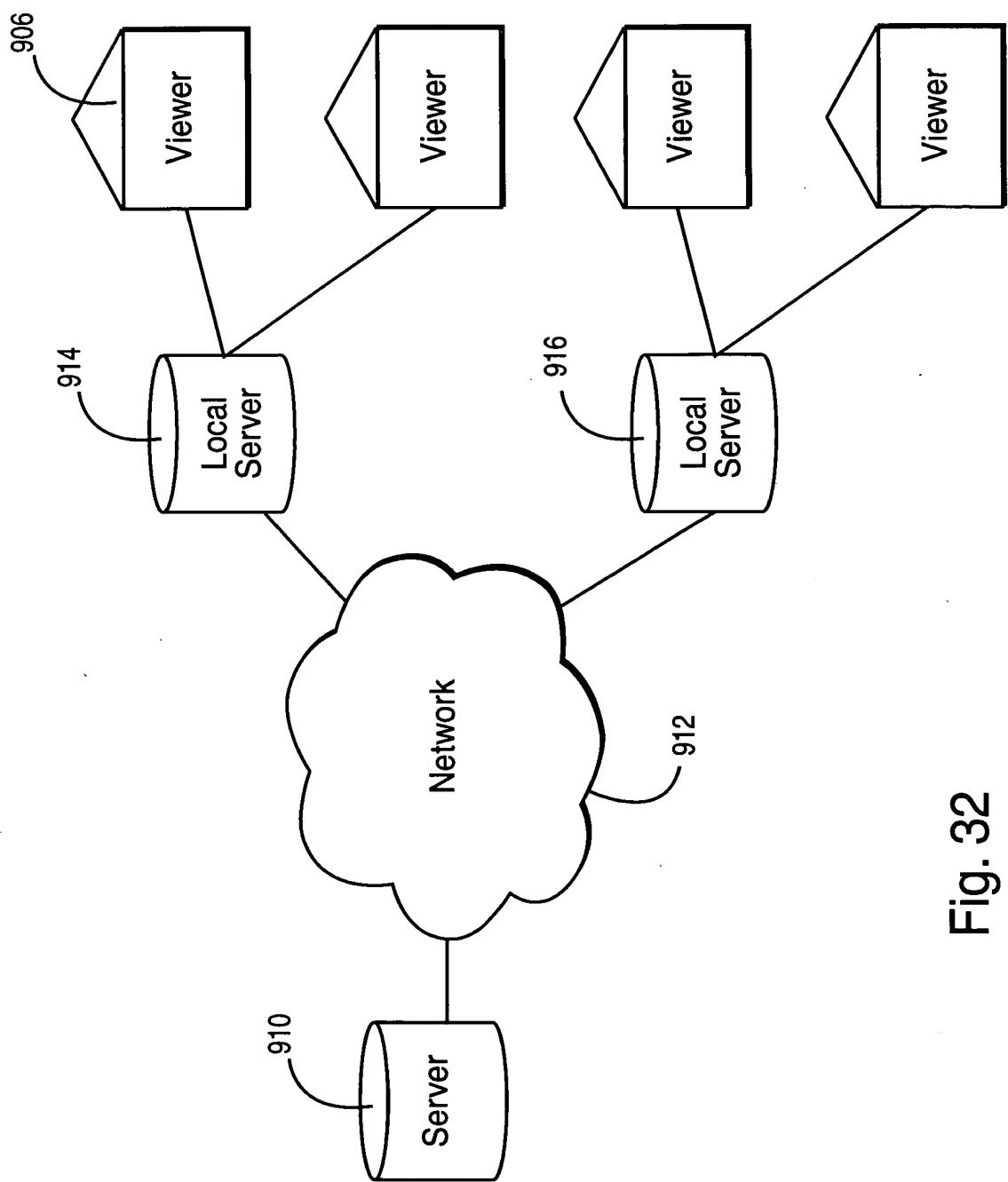
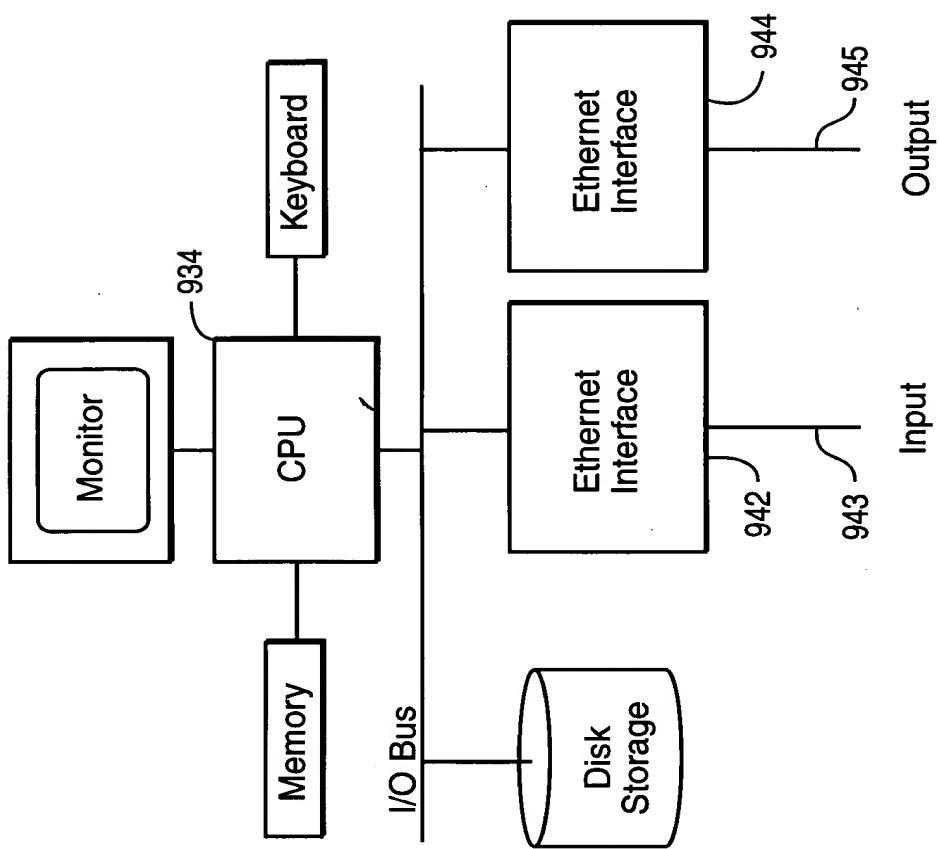


Fig. 32  
Example Local Video/Audio Servers



**Fig. 33**  
Example Local Server Hardware Configuration

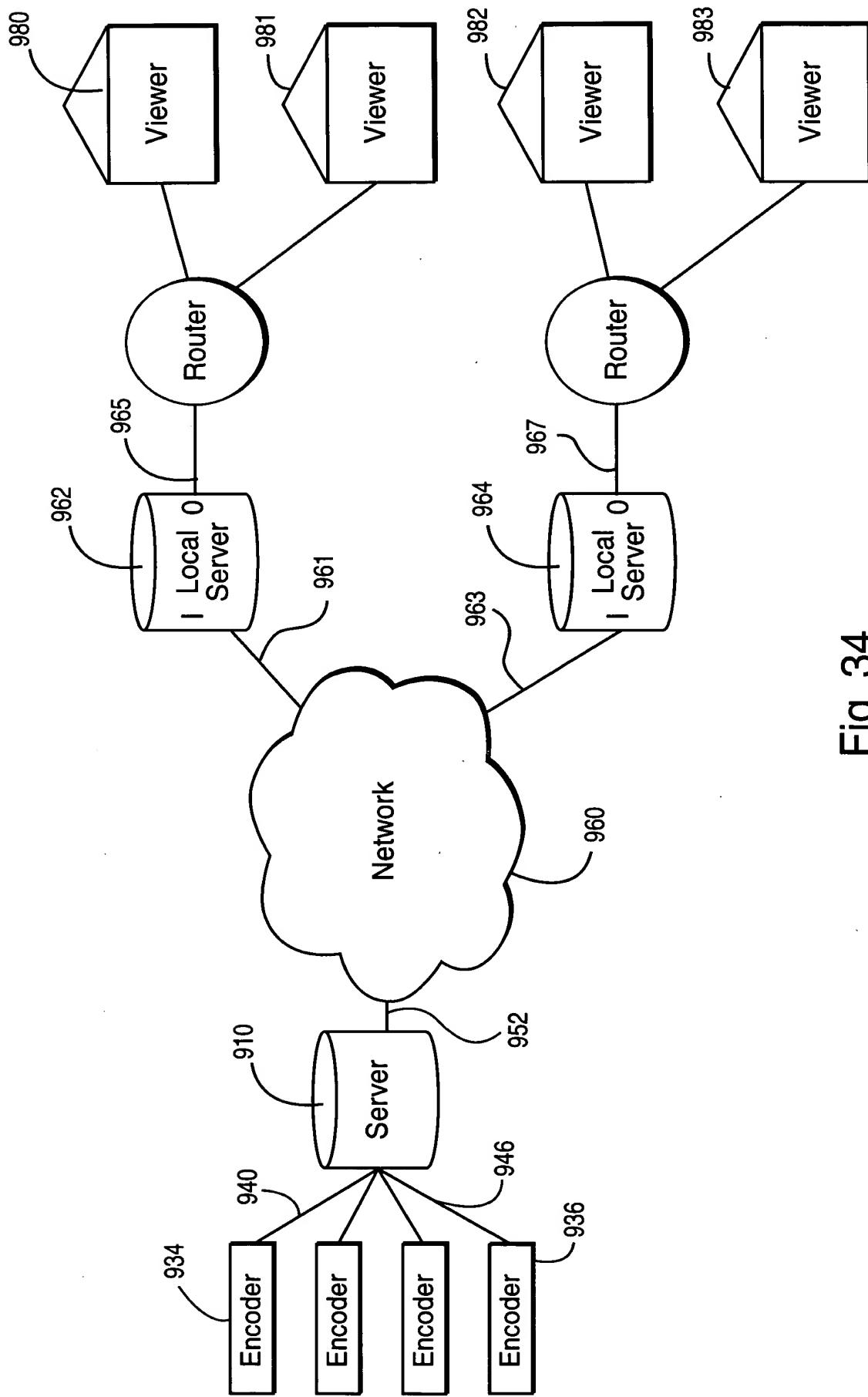
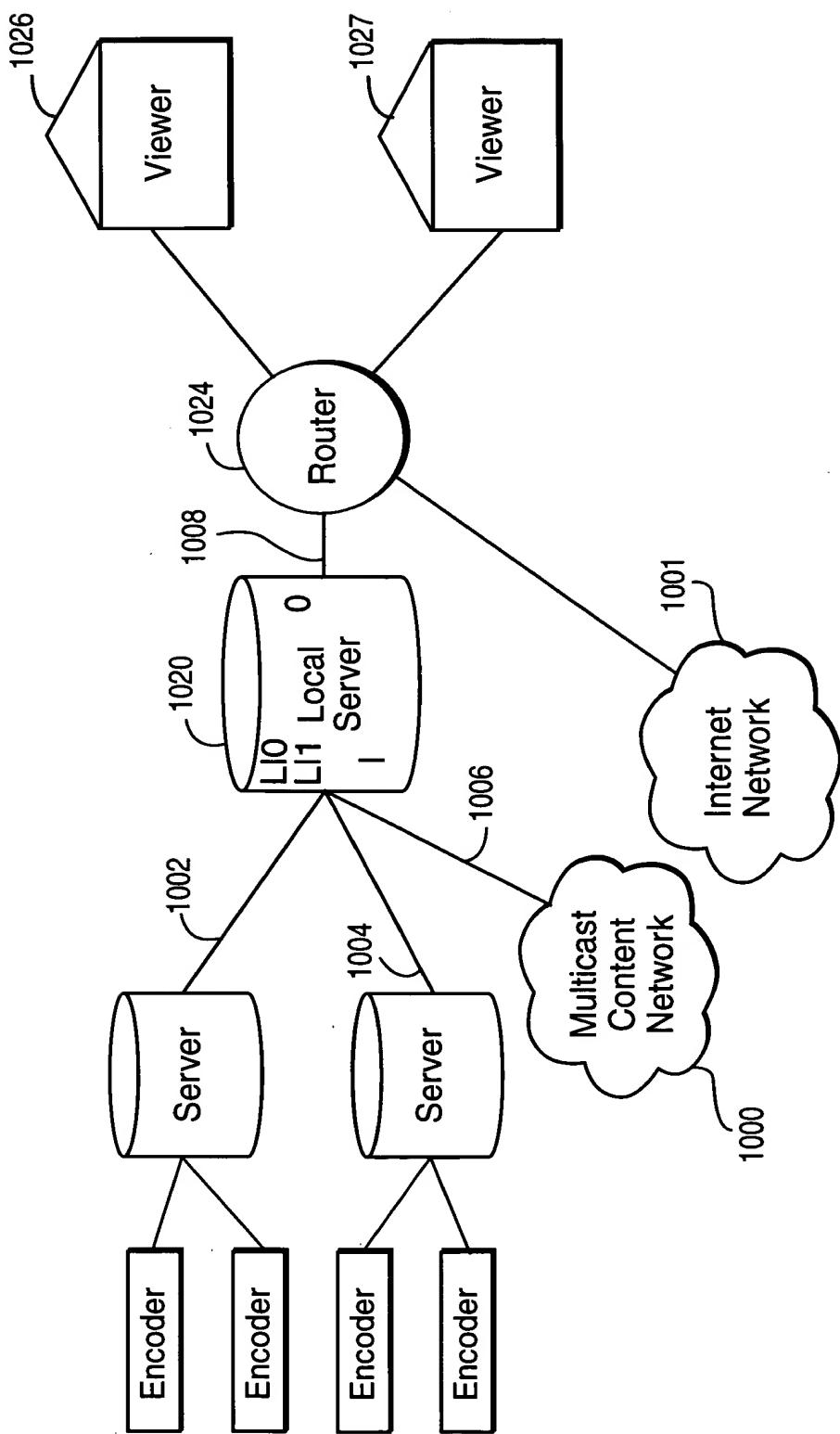
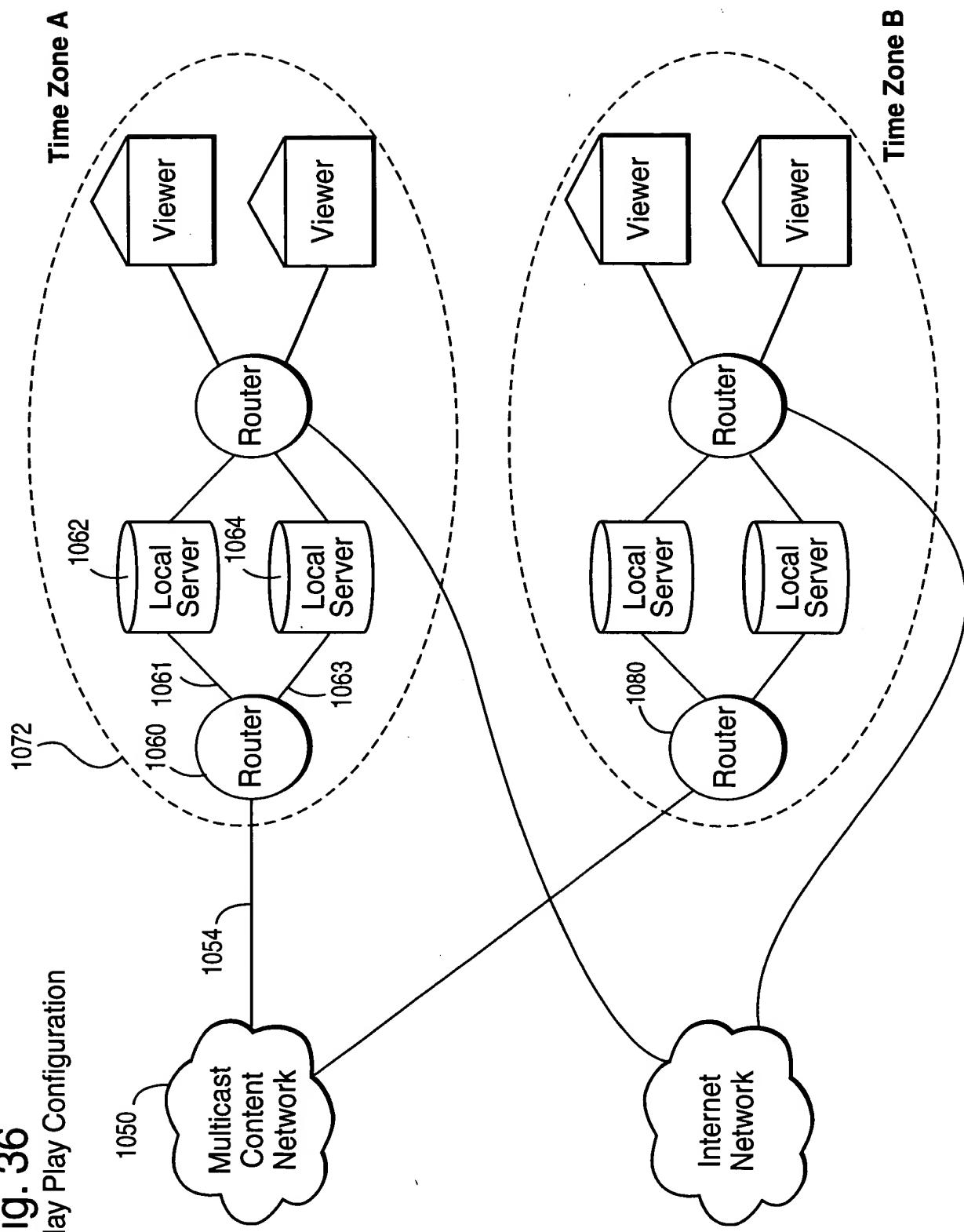


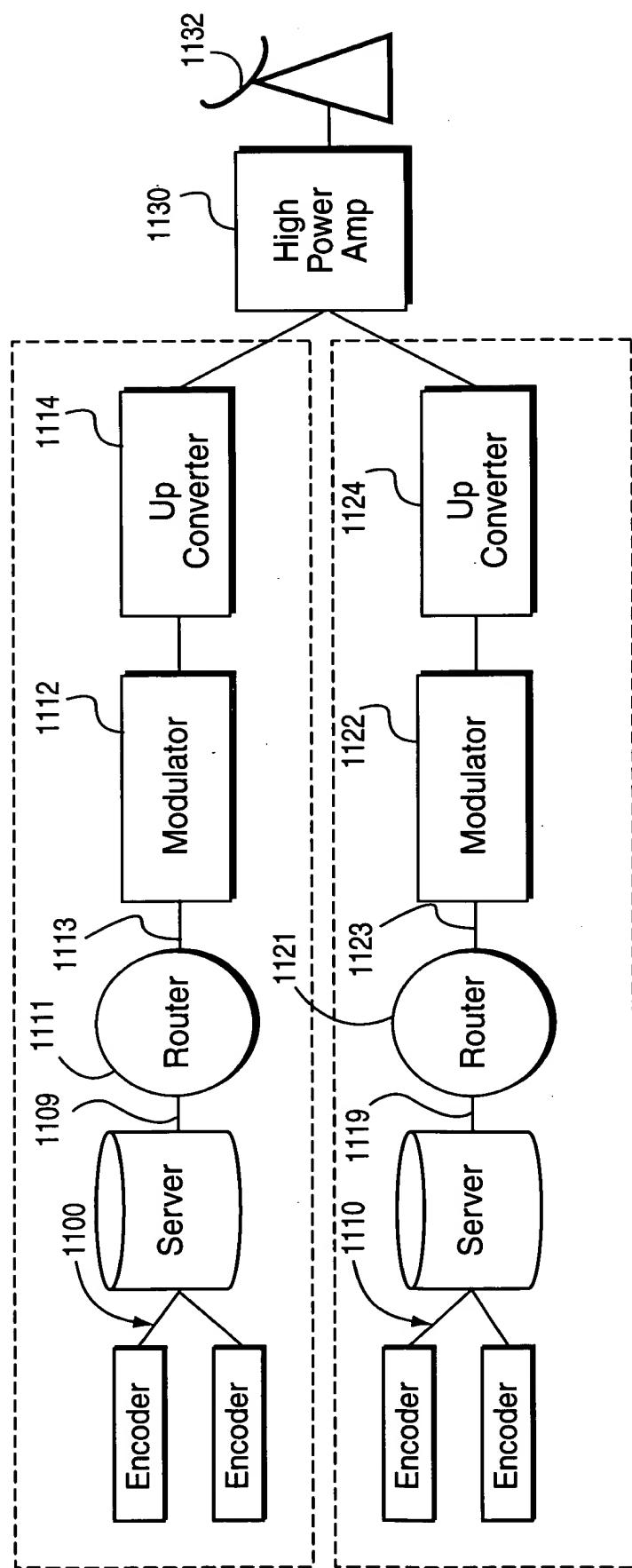
Fig. 34  
Example Local Multicast Insertion



**Fig. 35**  
Example Multicast Internet Configuration

**Fig. 36**  
Example Delay Play Configuration





**Fig. 37**  
Example Satellite Multicast Uplink Equipment

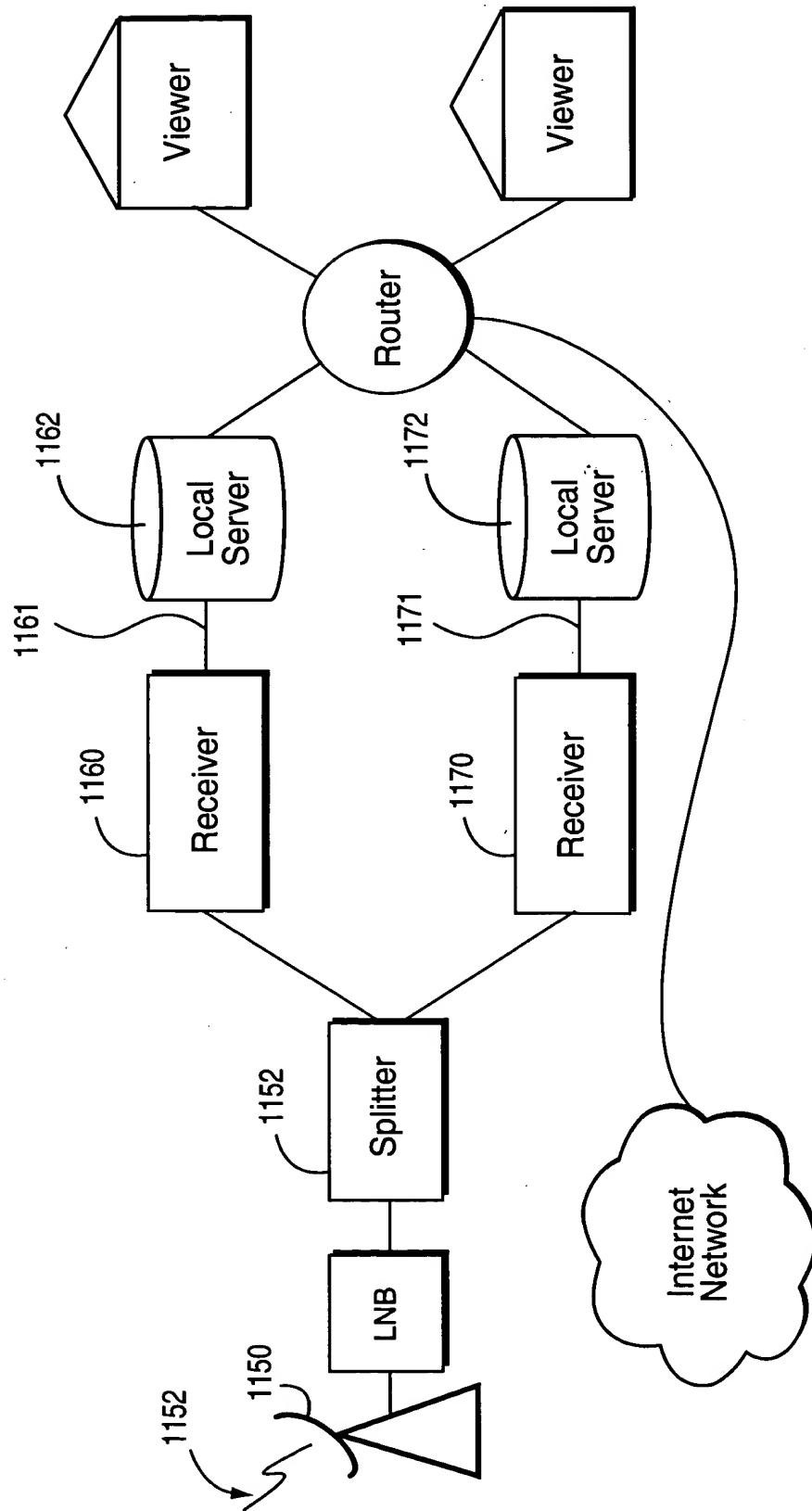


Fig. 38  
Example Satellite Multicast Downlink Equipment

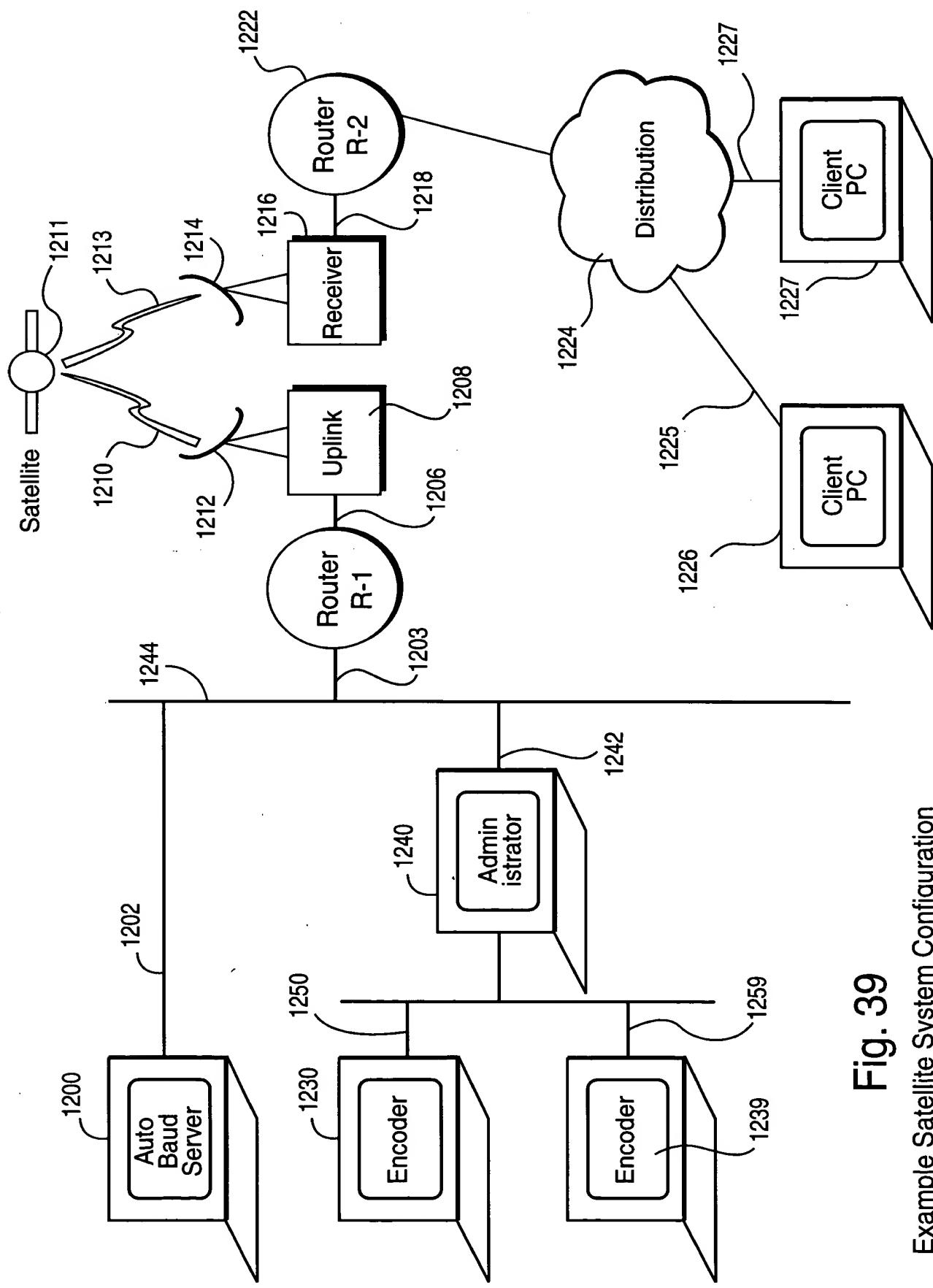


Fig. 39  
Example Satellite System Configuration

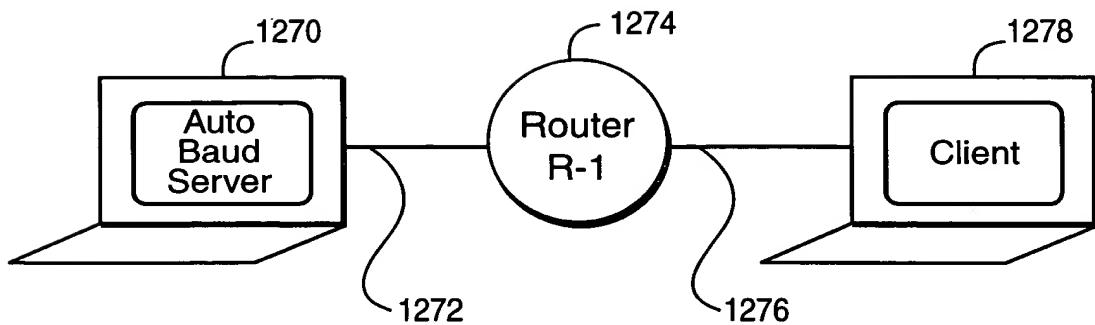
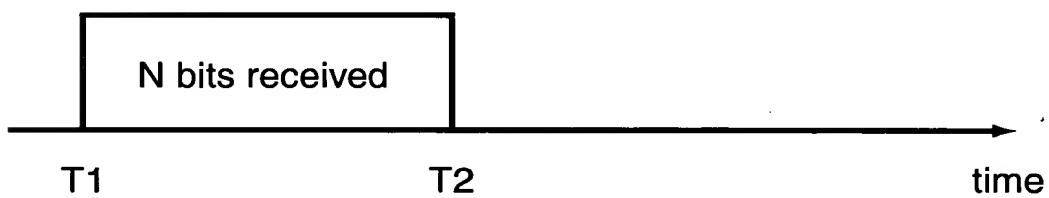
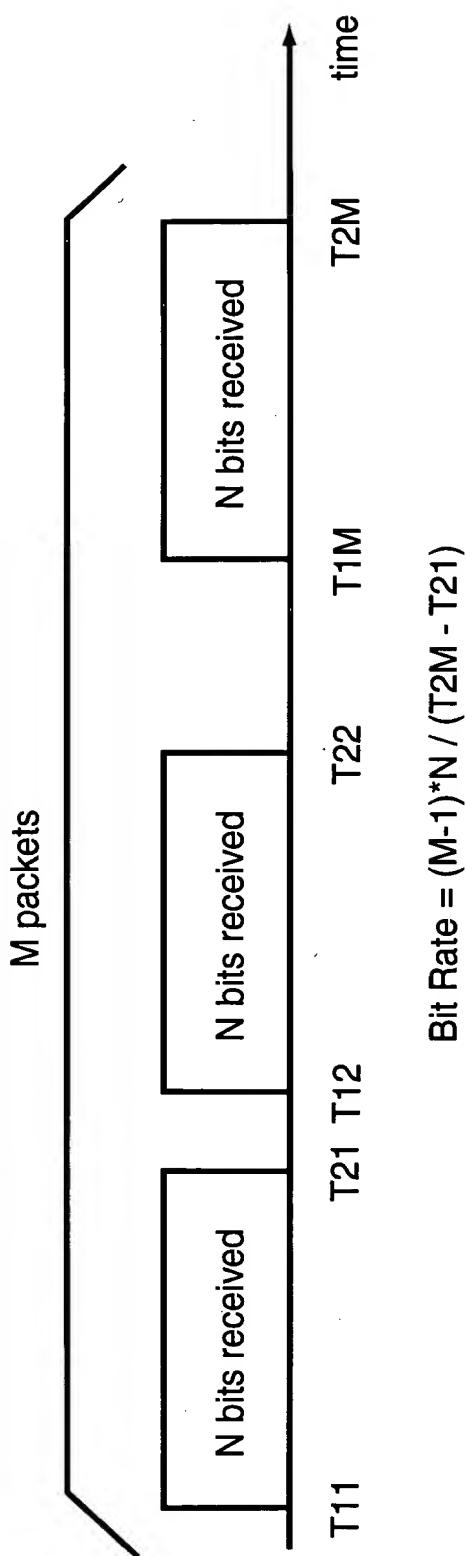


Fig. 40  
Simplified System Configuration



$$\text{Bit Rate} = N / (T2 - T1)$$

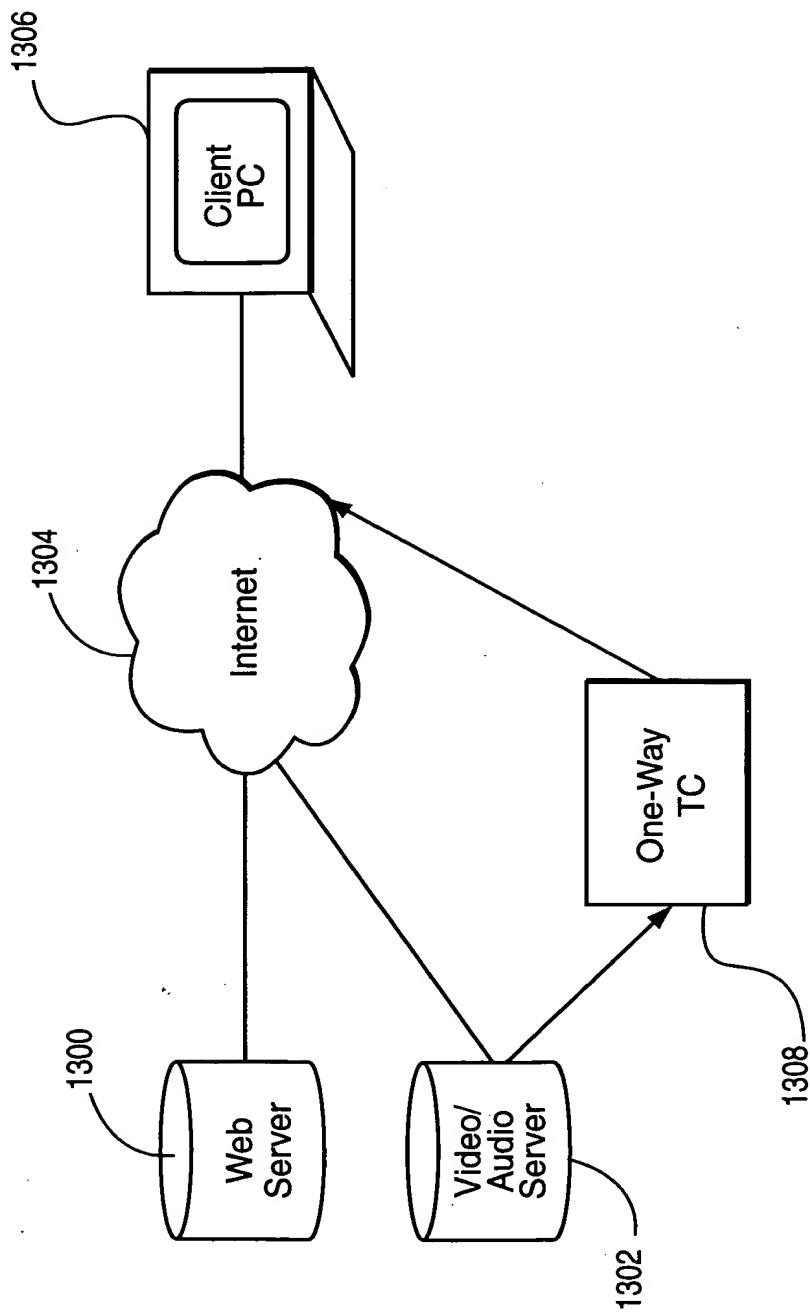
Fig. 41  
Single Packet Timing Diagram



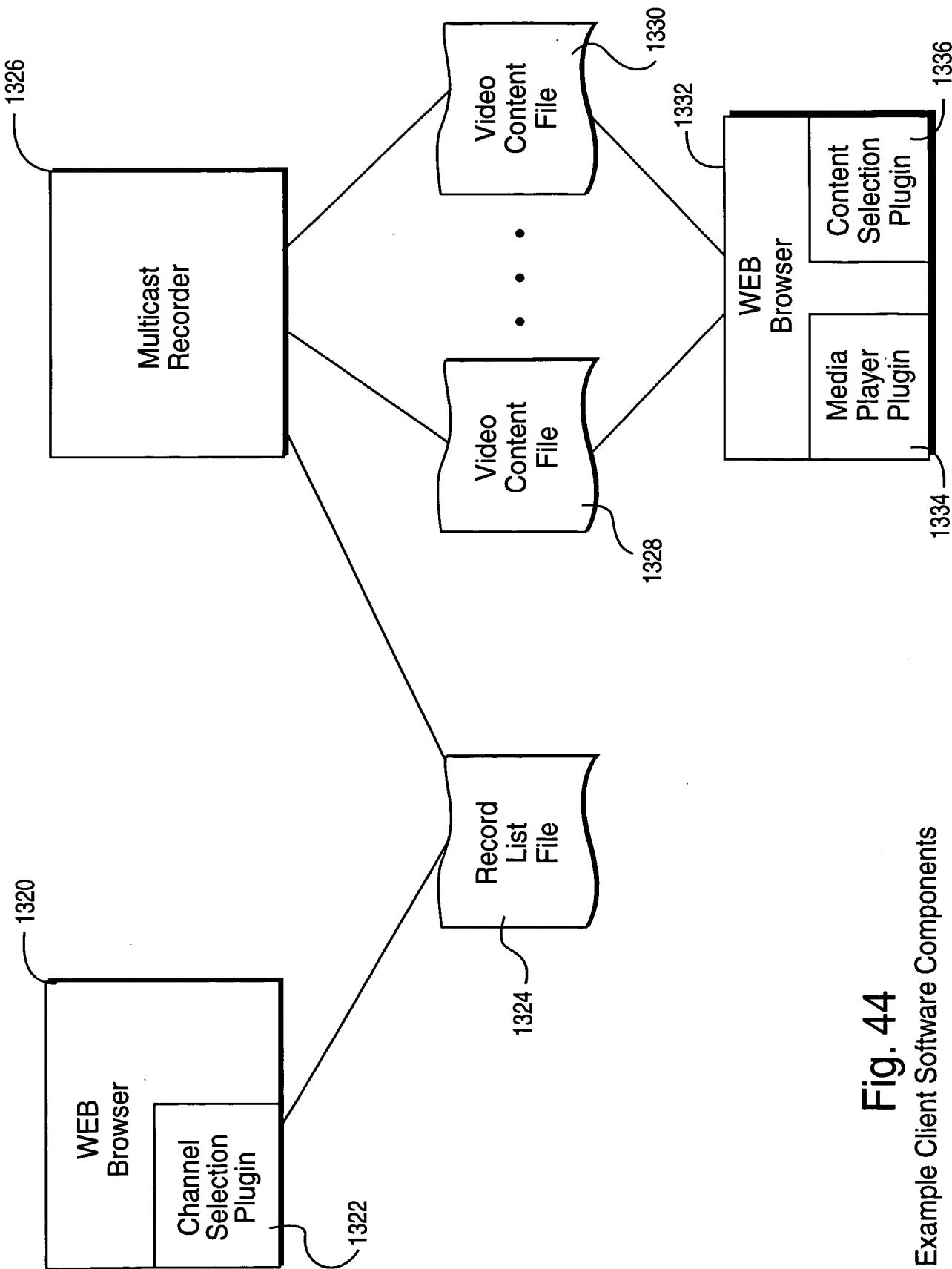
$$\text{Bit Rate} = (M-1)*N / (T_{2M} - T_{11})$$

**Fig. 42**

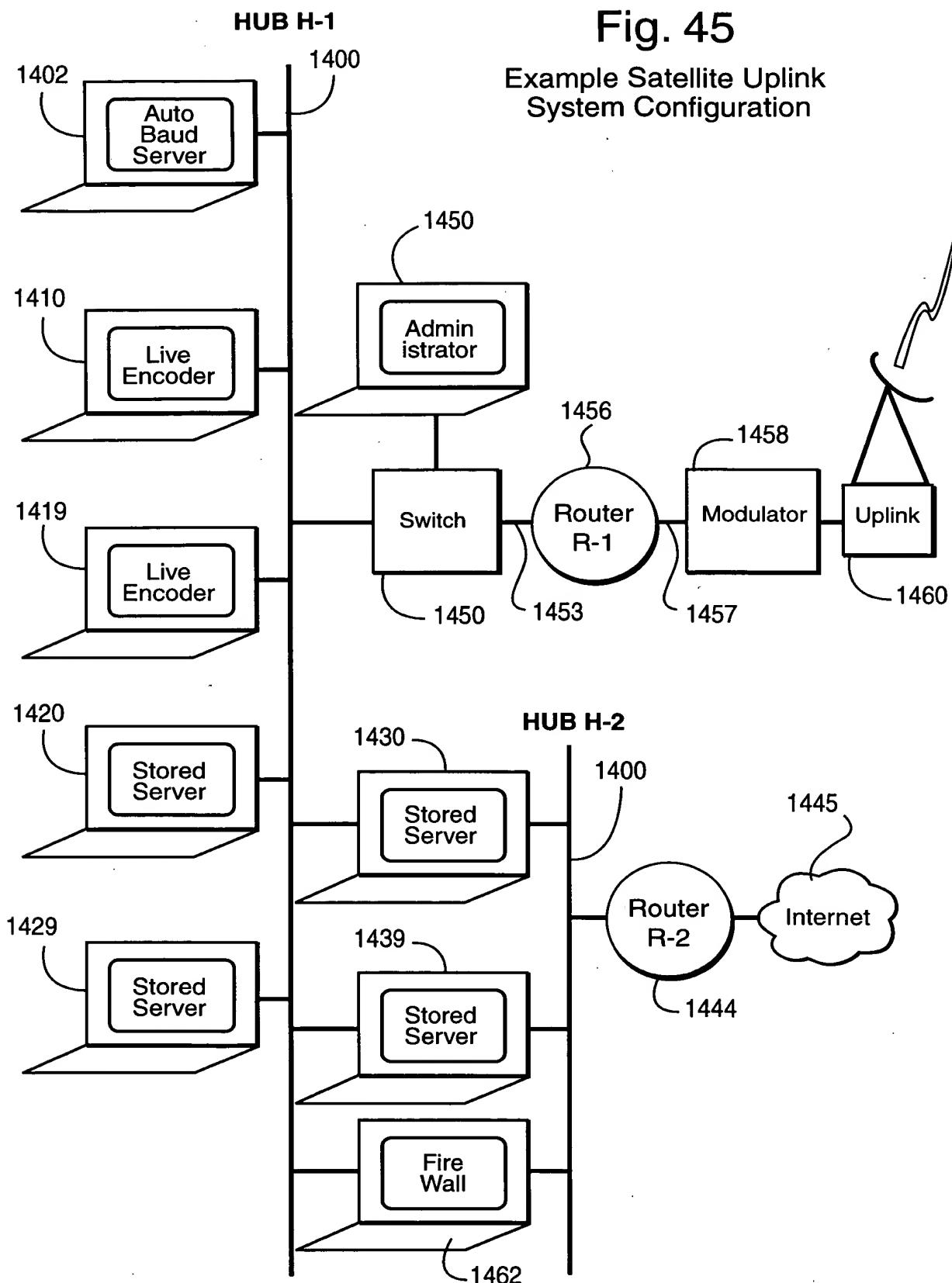
Multipacket Timing Diagram



**Fig. 43**  
Local Replay System



**Fig. 44**  
Example Client Software Components



## Uplink Equipment List

Switch	HP 800T
Router R-1	Cisco 7205
Router R-2	Cisco 2503
Modulator	Raydyne 3030-HSSI
HUB H-1	Allied Telesys CentreCom FH824U
HUB H-2	3-Com SuperStack-II

AB = AutoBaud Server  
 LEV = Live Encoder - Video  
 LEA = Live Encoder - Audio  
 SS = Stored Server  
 A = Administrator  
 FW = Fire Wall

HARDWARE	AB	LEV	LEA	SS/A	FW
Keyboard - Generic	X	X	X	X	X
Hard Disk - Generic 10 Gb	X	X	X	X	X
Floppy Disk - Generic 3 1/2	X	X	X	X	X
Monitor - Generic SVGA	X	X	X	X	X
Memory - Generic 128 MB ECC	X	X	X	X	X
Processor - Dual Pentium-III 450 mHZ	X	X	X	X	X
Motherboard - SuperMicro P6DGE	X	X	X	X	X
Ethernet IO - 3-Com 3C905 (2req)	X	X	X	X	X
Audio capture - Creative 128		X	X		
Video capture - Osprey 100			X		

SOFTWARE	AB	LEV	LEA	SS/A	FW
Operating System - Microsoft NT Server 4	X	X	X	X	X
Encoding - Microsoft Media Services 4		X	X		
Fire Wall - Axent Raptor 6					X

Fig. 46

Example Satellite Uplink  
 System Equipment List

Fig. 47

Example ISP Connected  
Downlink Equipment

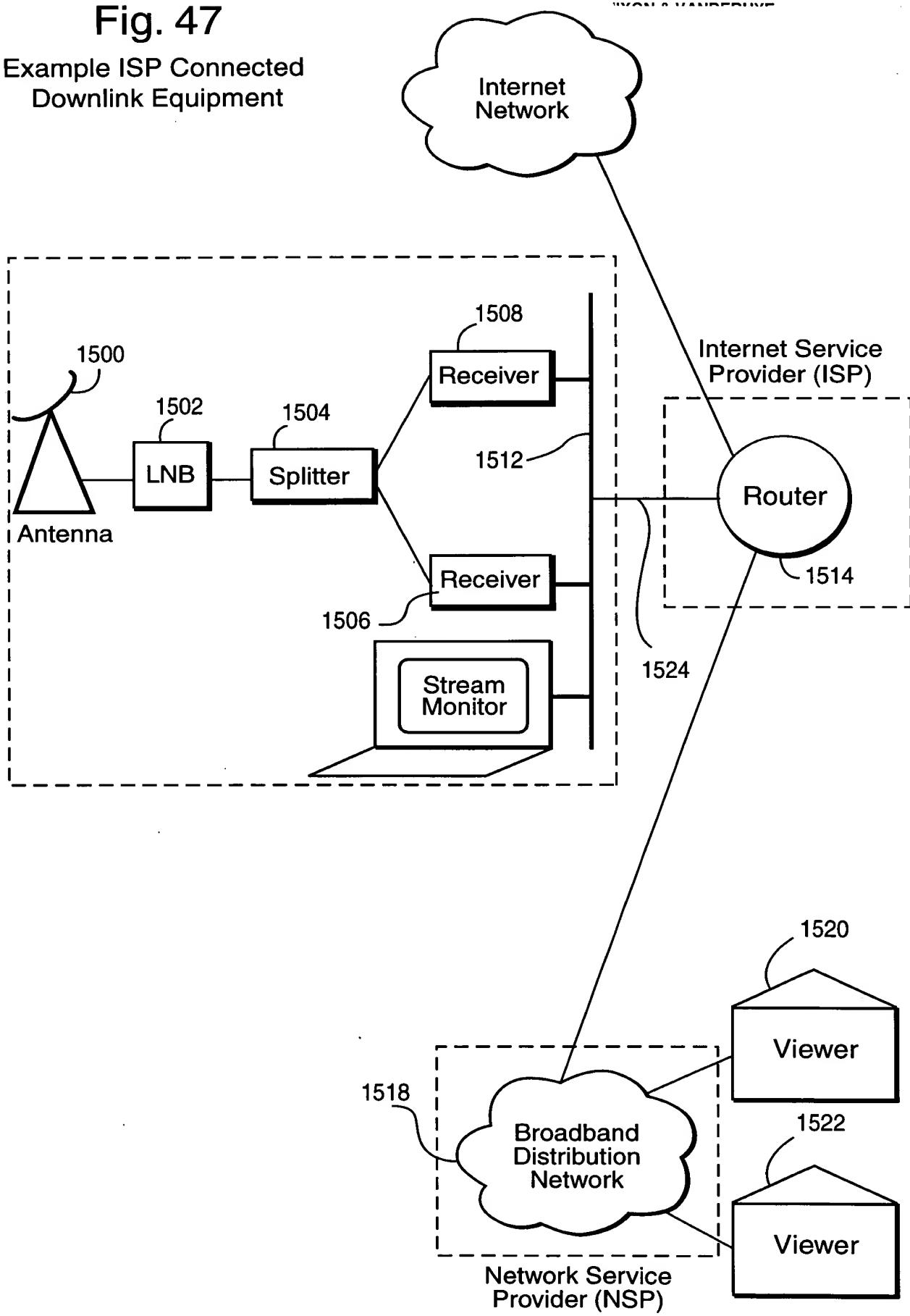
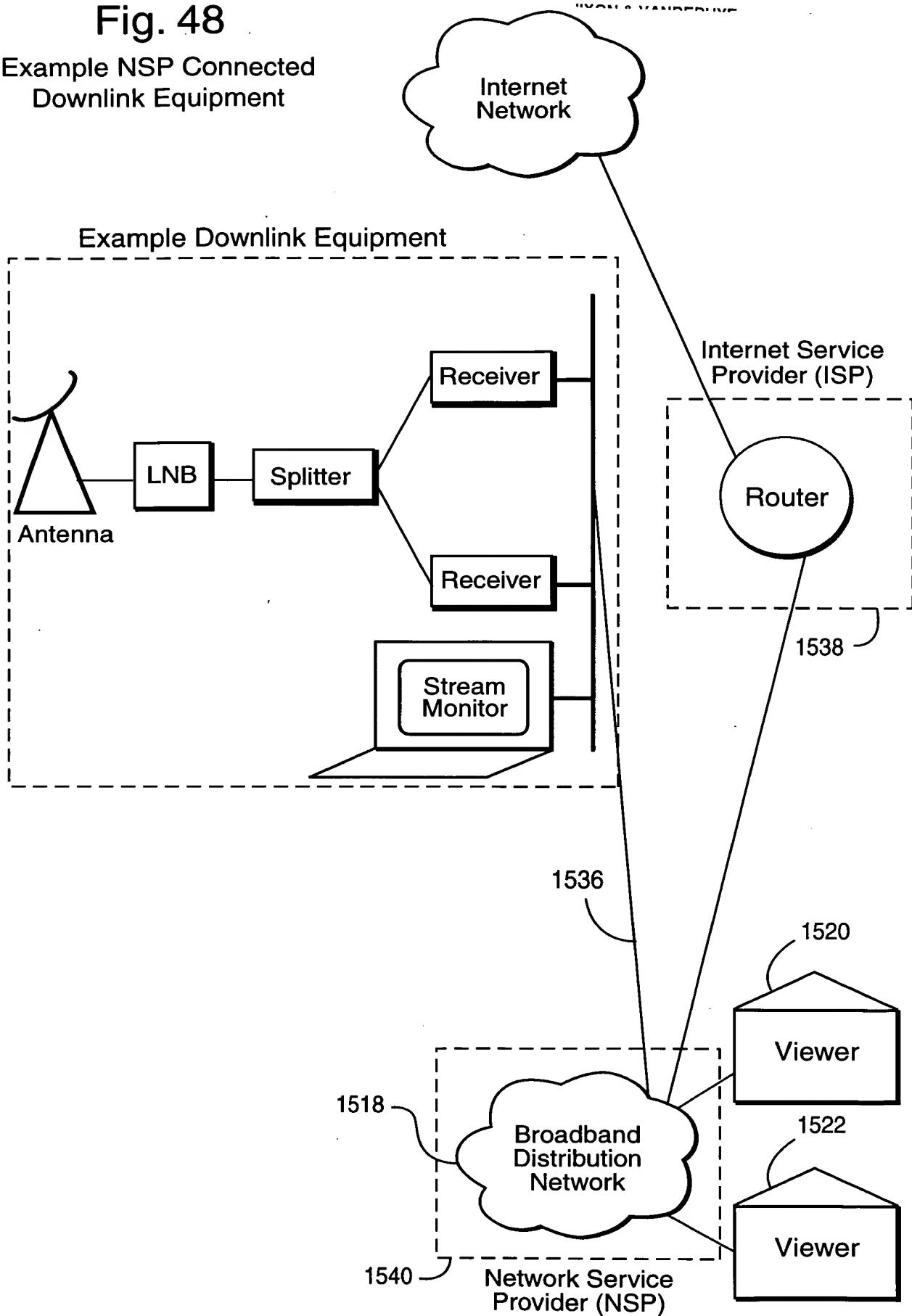


Fig. 48

Example NSP Connected  
Downlink Equipment



HUB                   Allied Telesys CentreCom FH824U

Antenna              Prodlin

LNB                   ??

Receiver (2req) StarGuide Digital SG-II with 100Base T Ethernet card

**HARDWARE**

Keyboard - Generic

Hard Disk - Generic 10 Gb

Floppy Disk - Generic 3 1/2

Monitor - Generic SVGA

Memory - Generic 128 MB ECC

Processor - Dual Pentium-III 450 mHZ

Motherboard - SuperMicro P6DGE

Ethernet IO - 3-Com 3C905

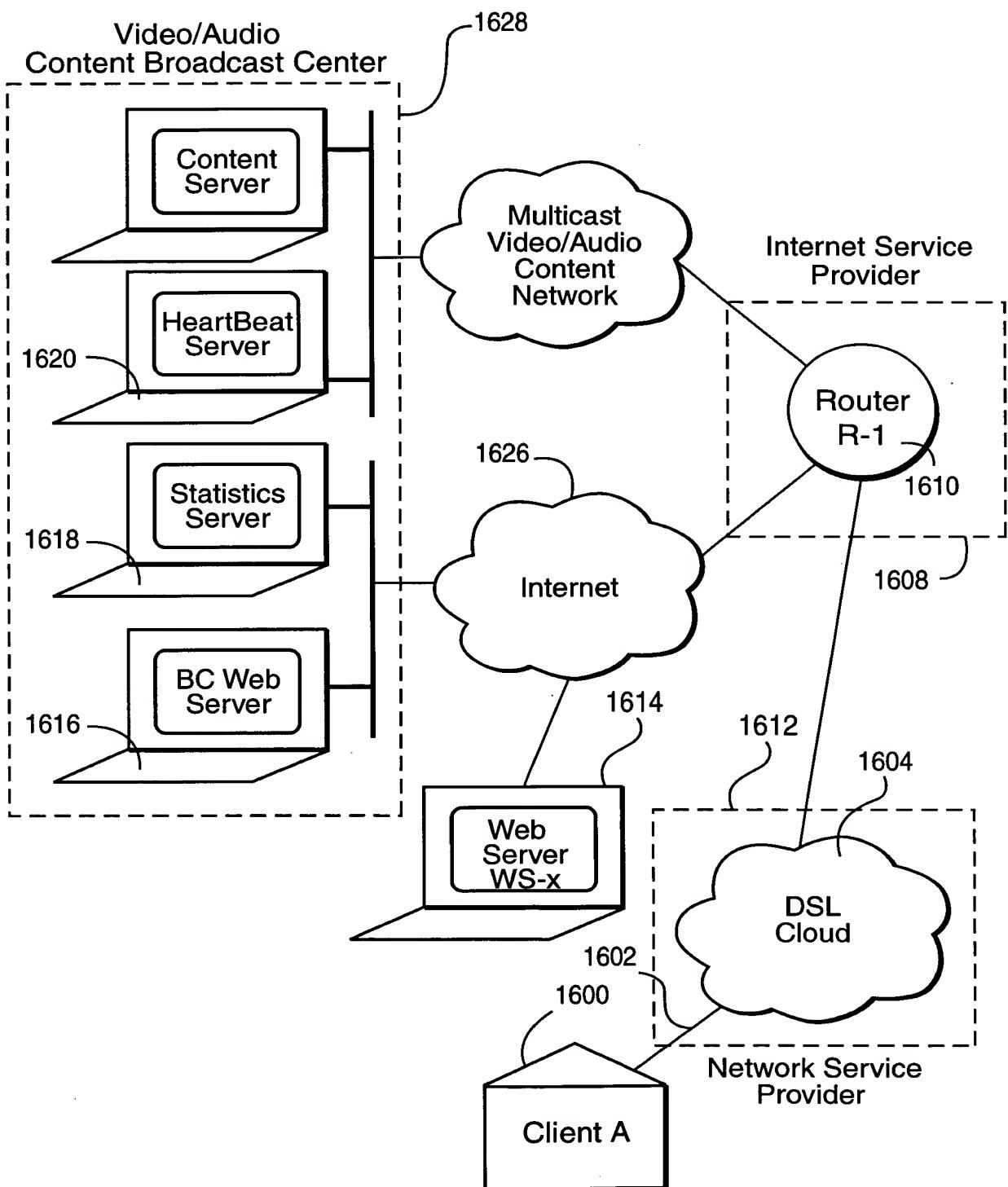
**SOFTWARE**

Operating System - Microsoft NT Server 4

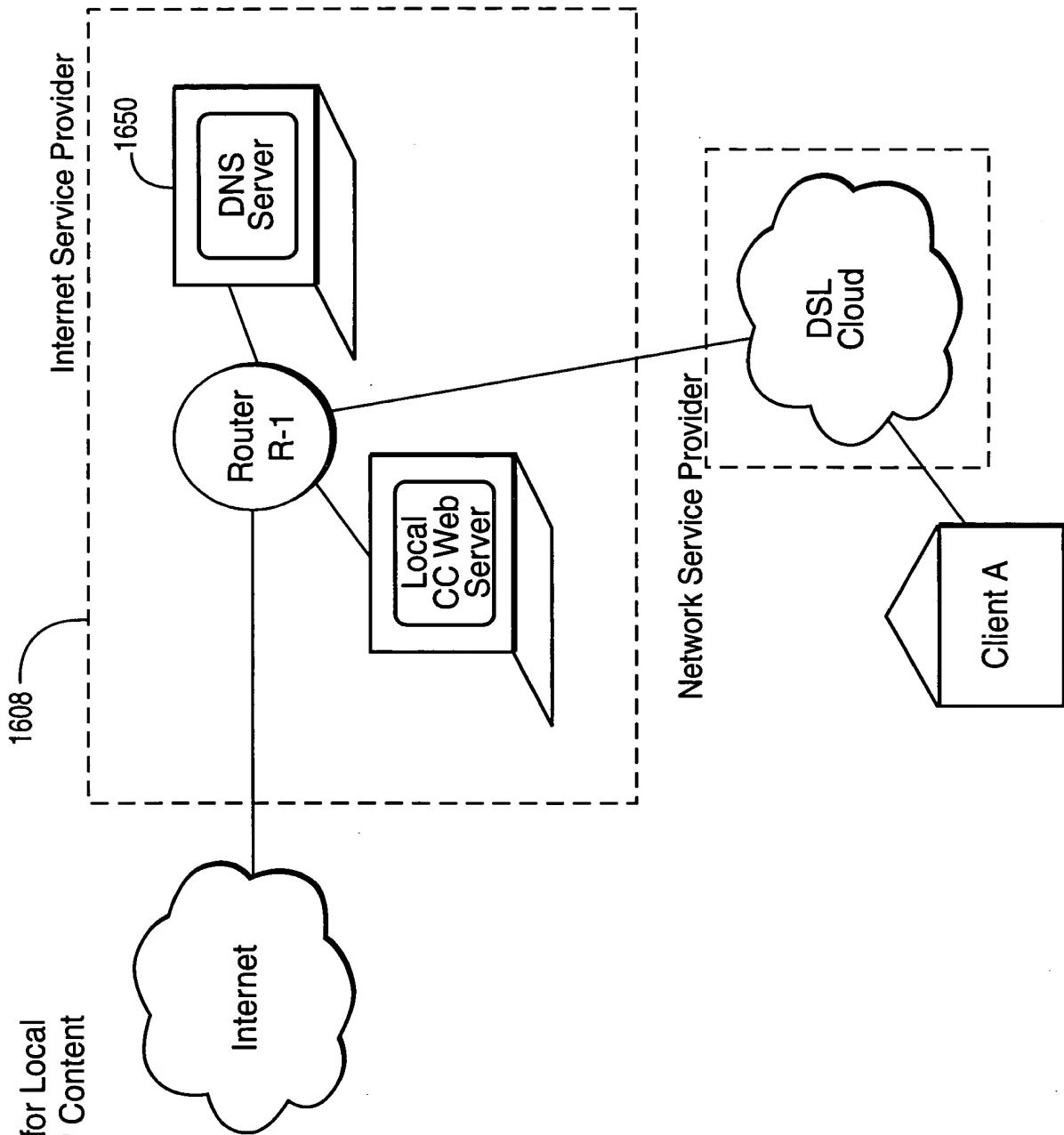
**Fig. 49**

Example Satellite Downlink  
System Equipment List

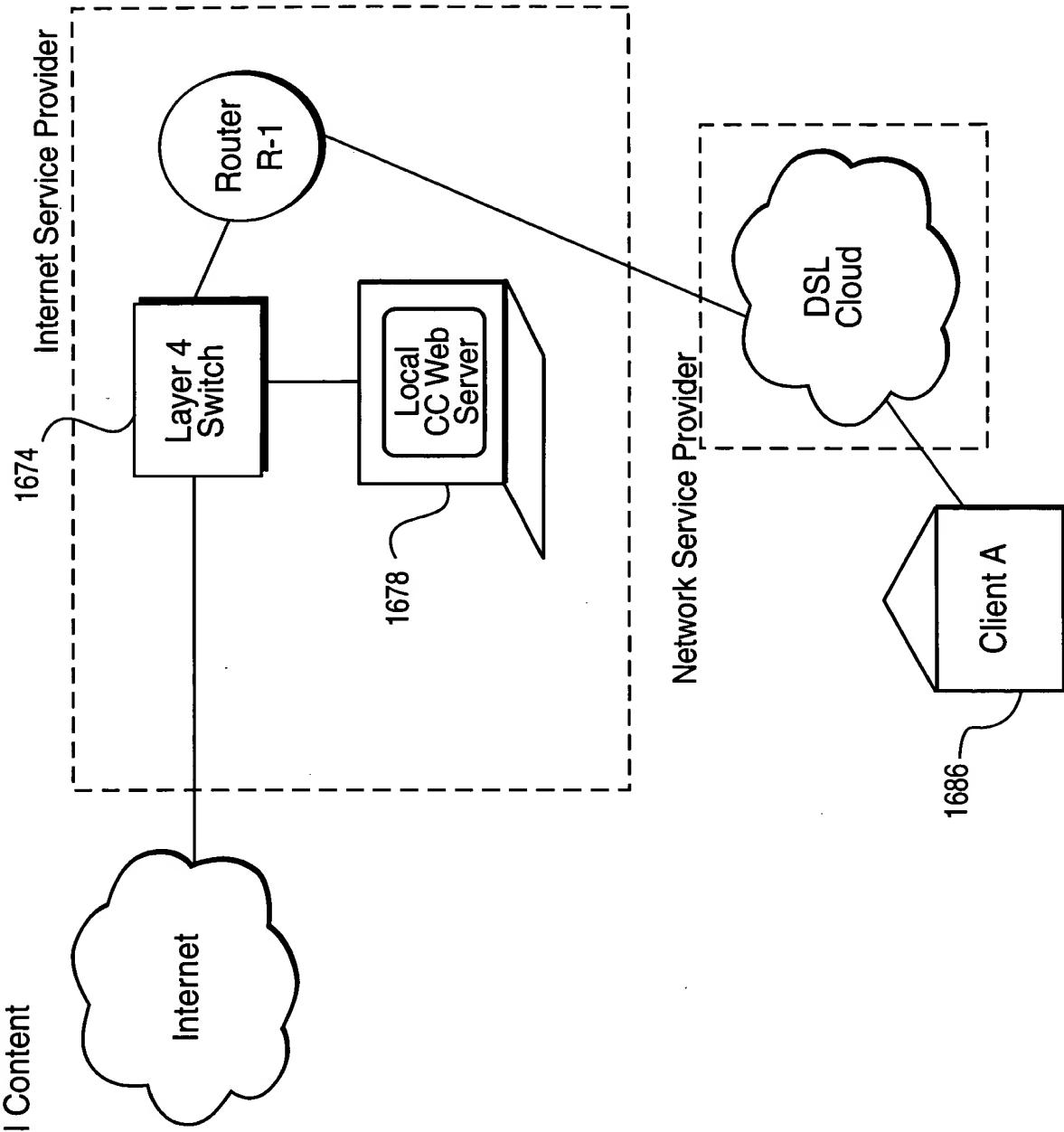
Fig. 50  
Example National Video/Audio  
Content Distribution Architecture



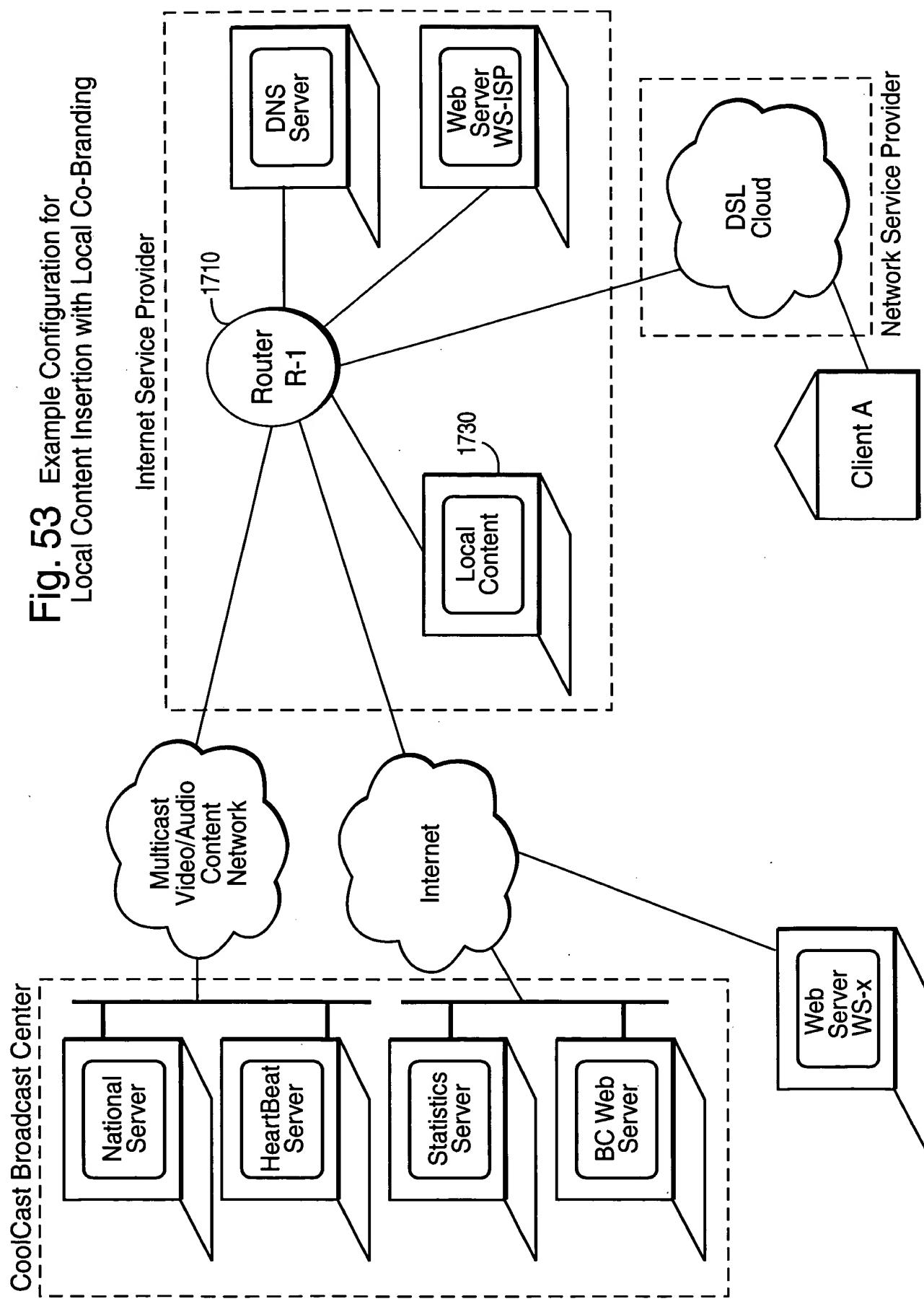
**Fig. 51**  
Example Configuration for Local  
Co-Branding of National Content



**Fig. 52**  
Example Configuration for Local  
Co-Branding of National Content



**Fig. 53** Example Configuration for Local Content Insertion with Local Co-Branding



**Fig. 54** Example Configuration for Local Content and Ad Insertion with Local Co-Branding

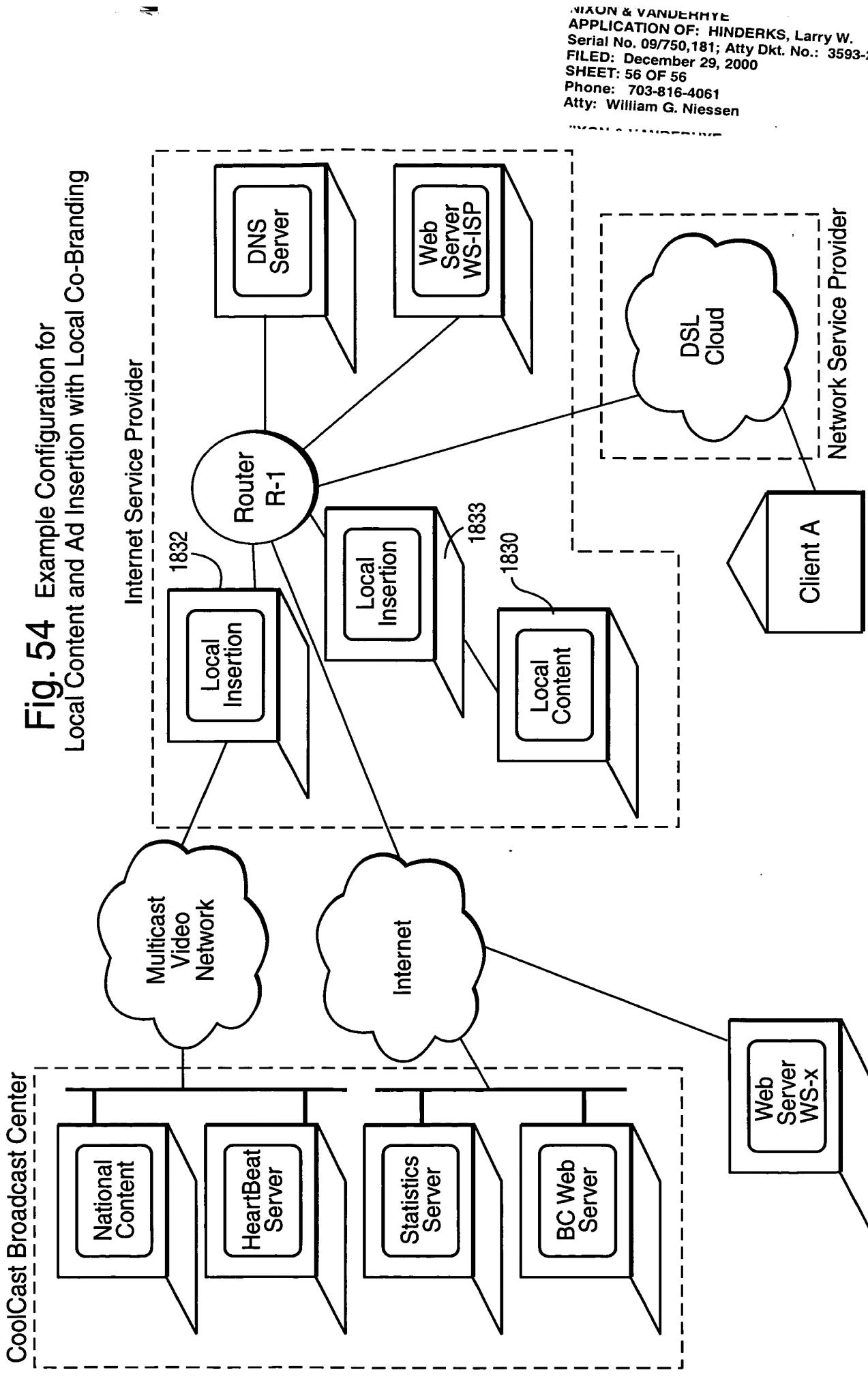
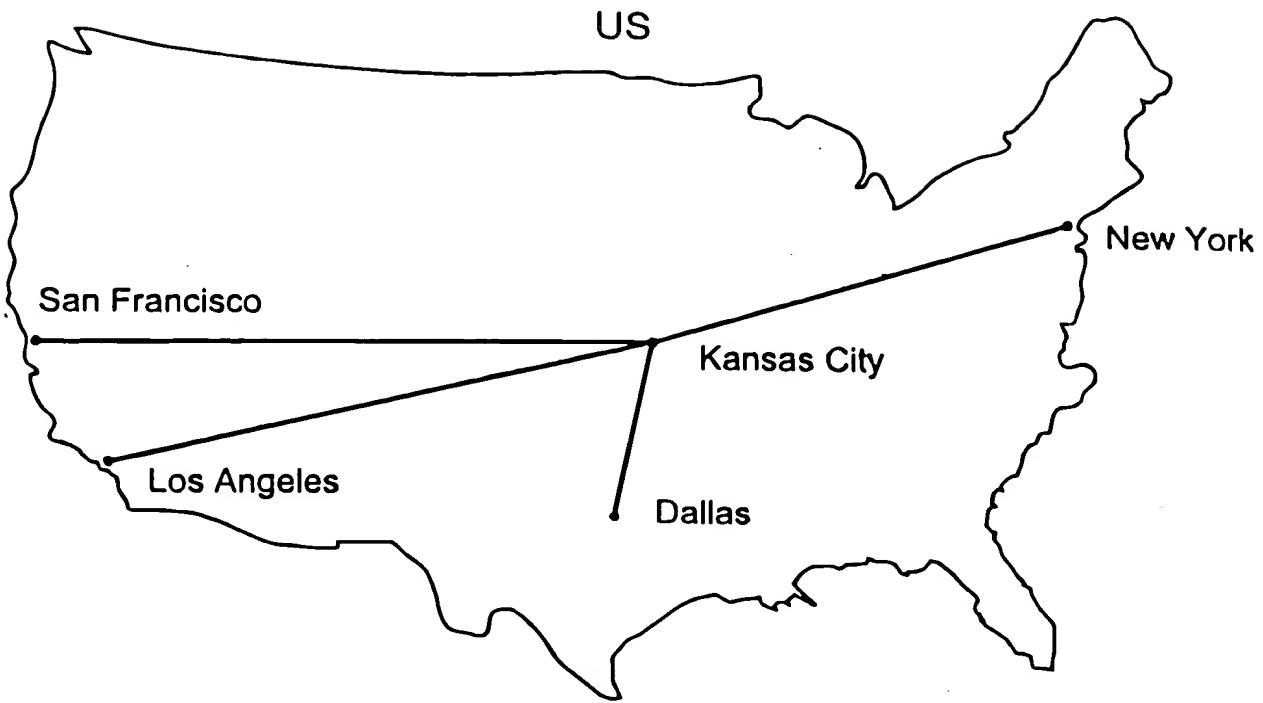


Fig. 1A  
(Prior Art)



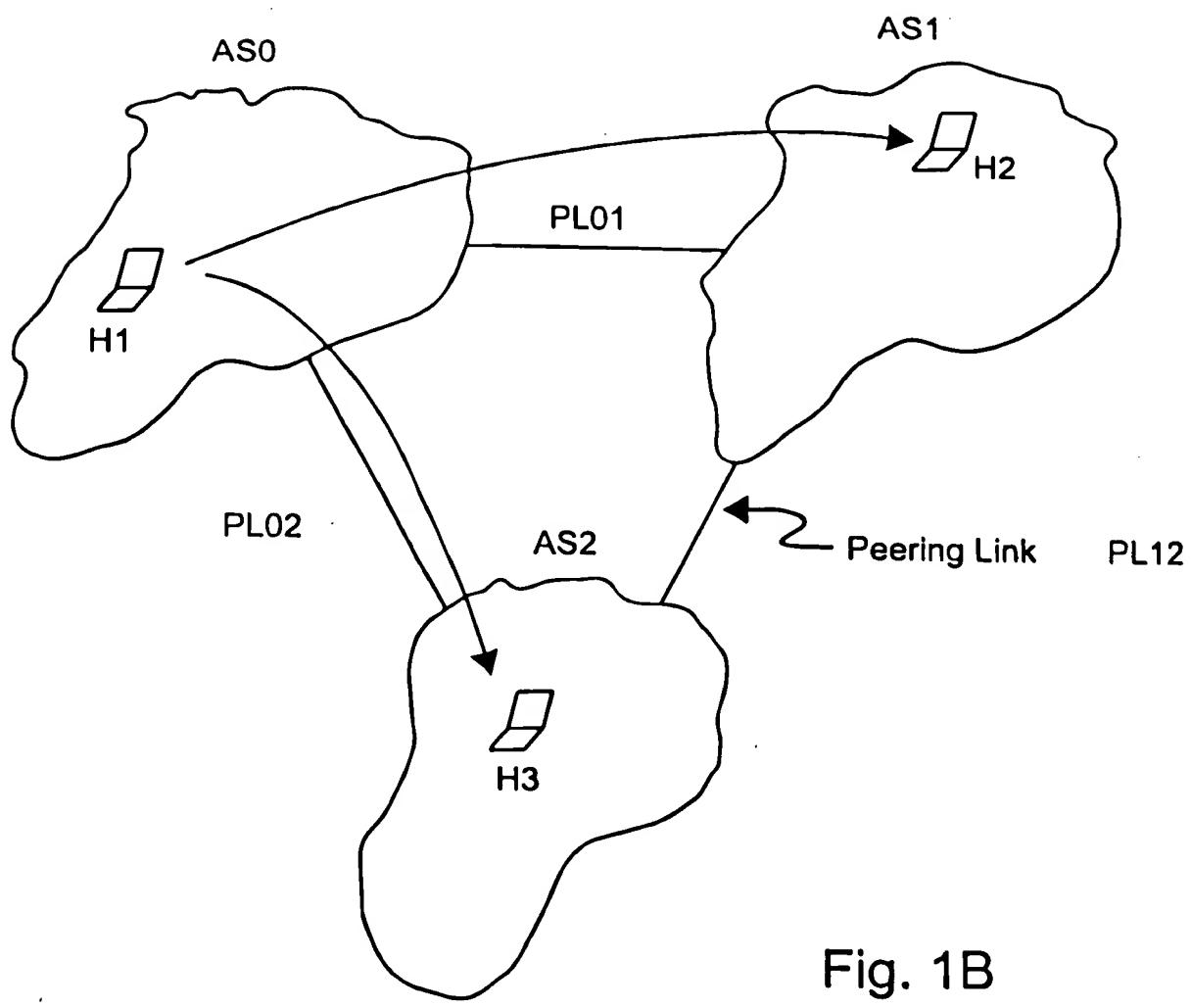


Fig. 1B  
(Prior Art)

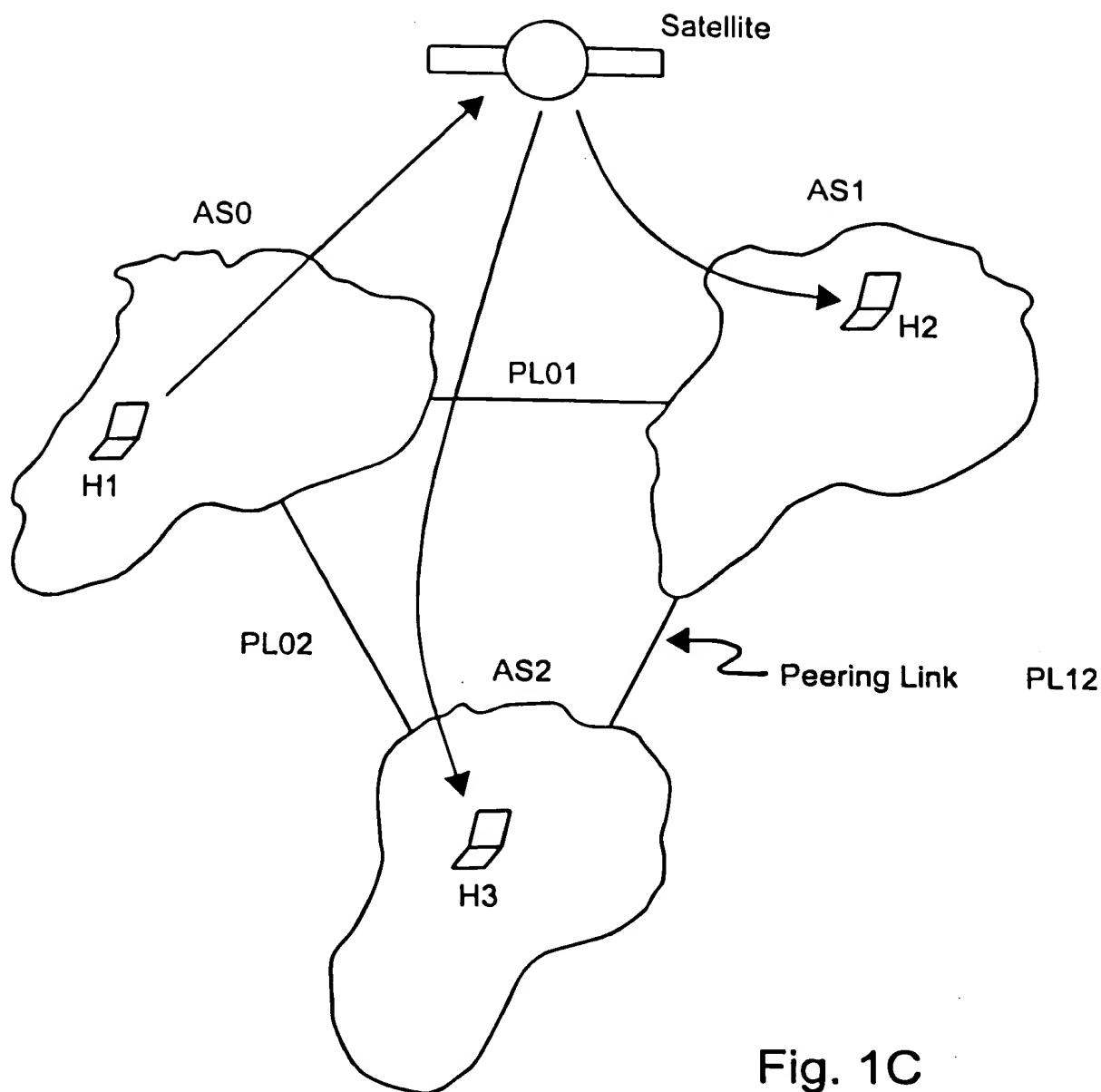


Fig. 1C

(Prior Art)

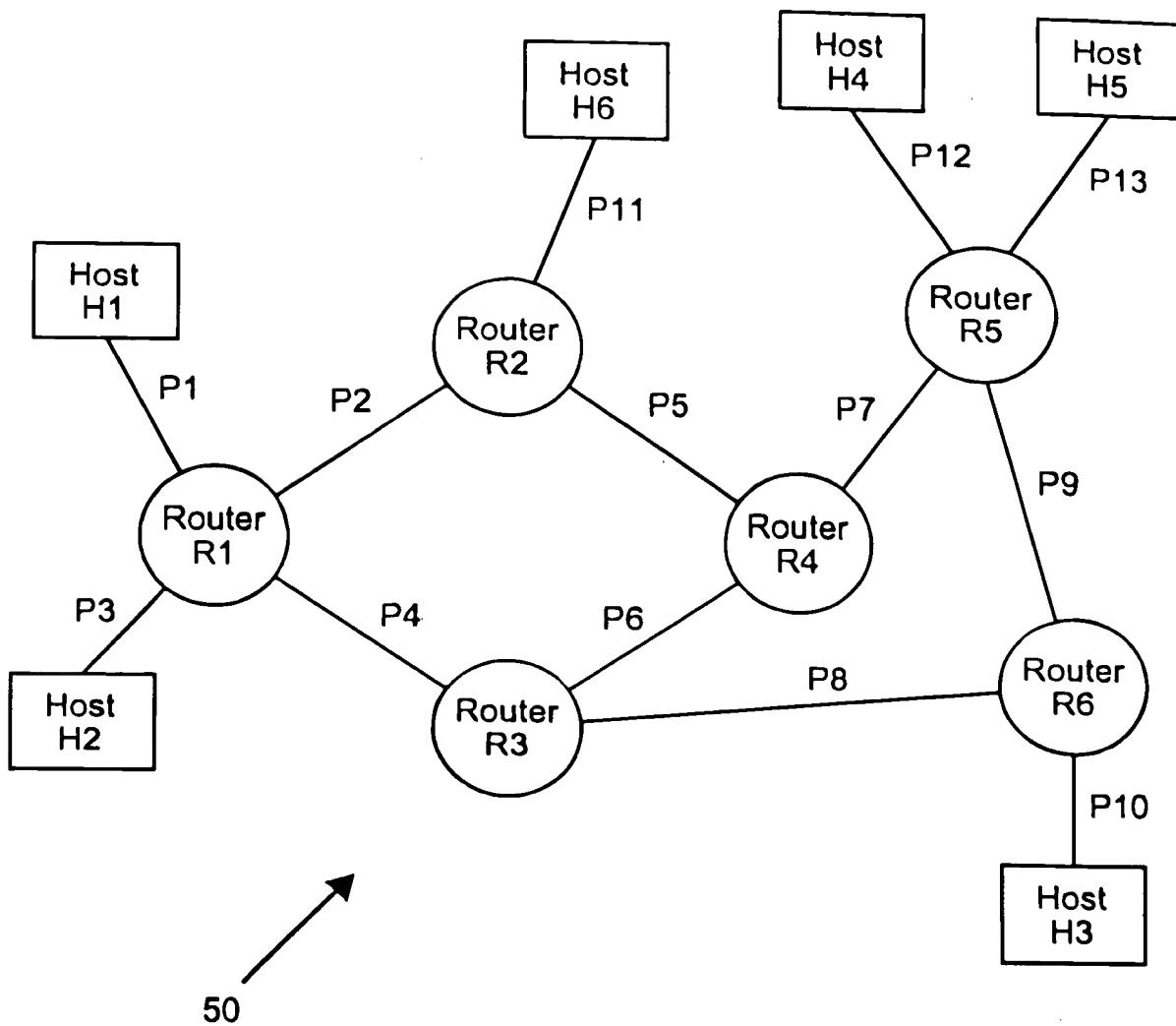


Fig. 1D  
(Prior Art)

Fig. 2

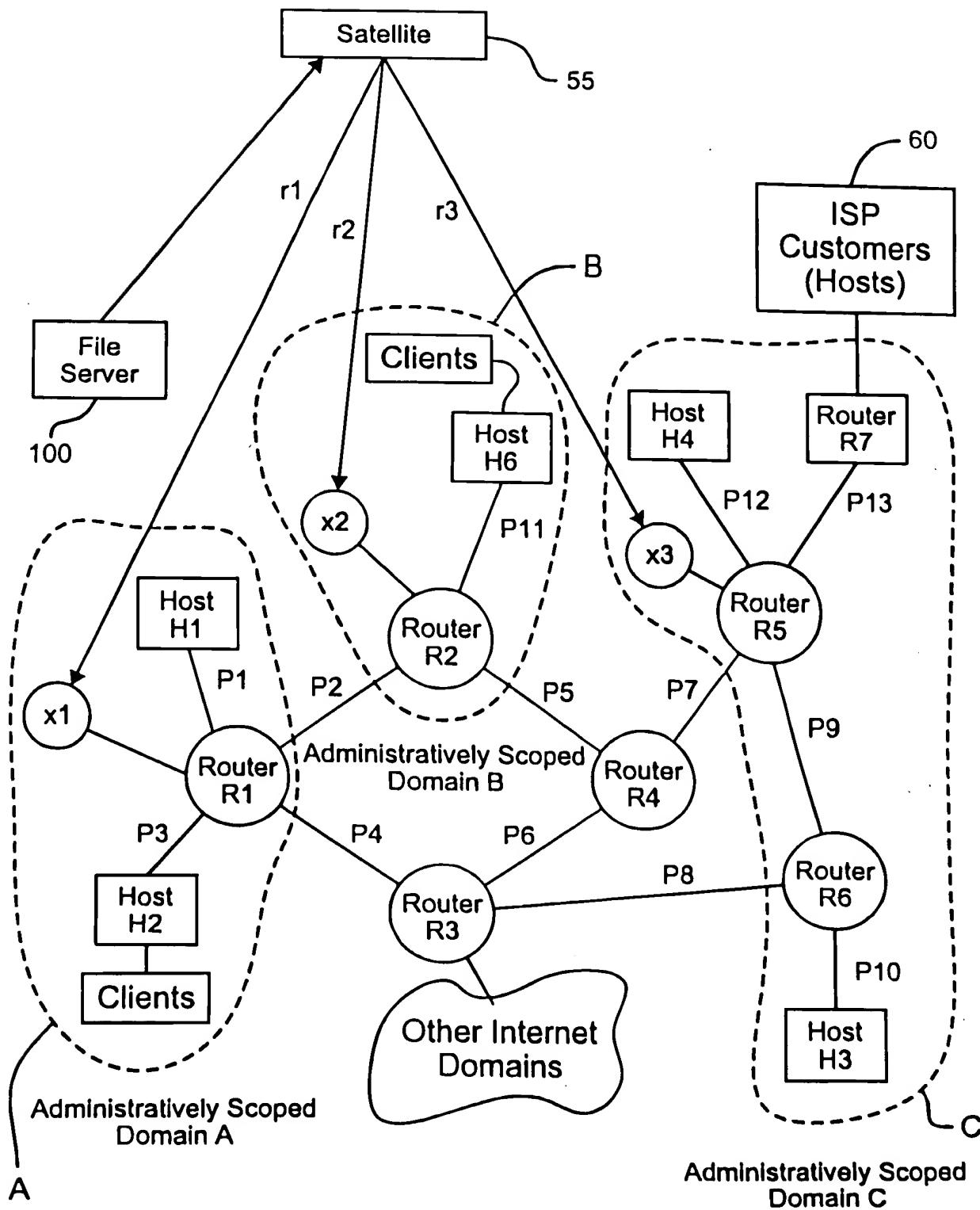
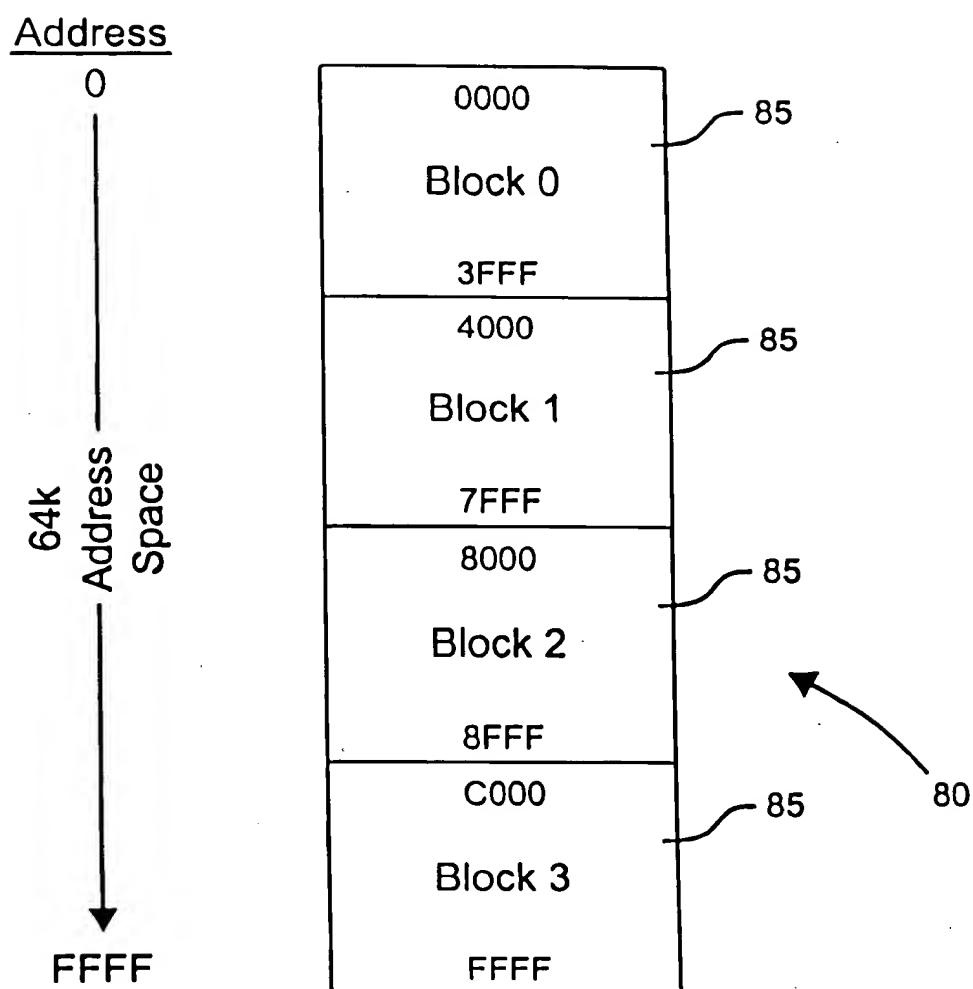


Fig. 3



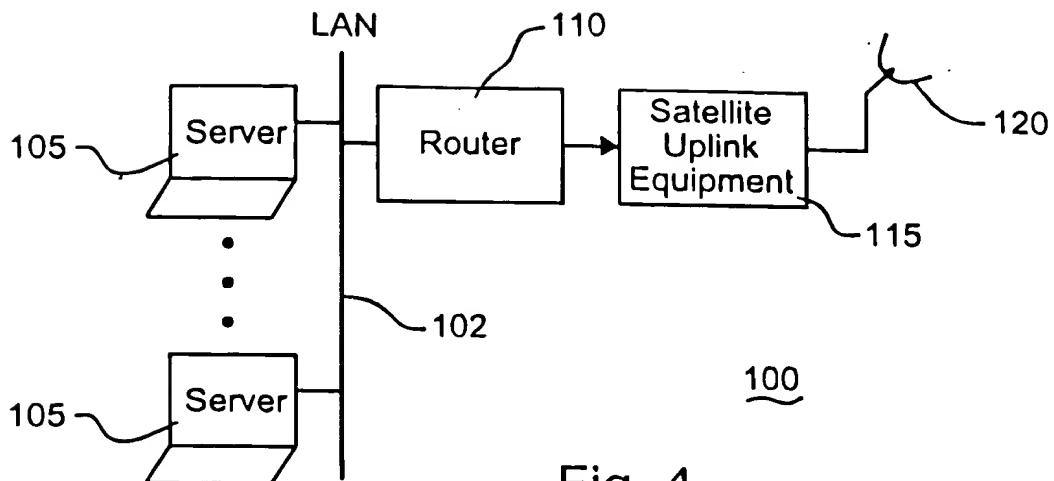


Fig. 4

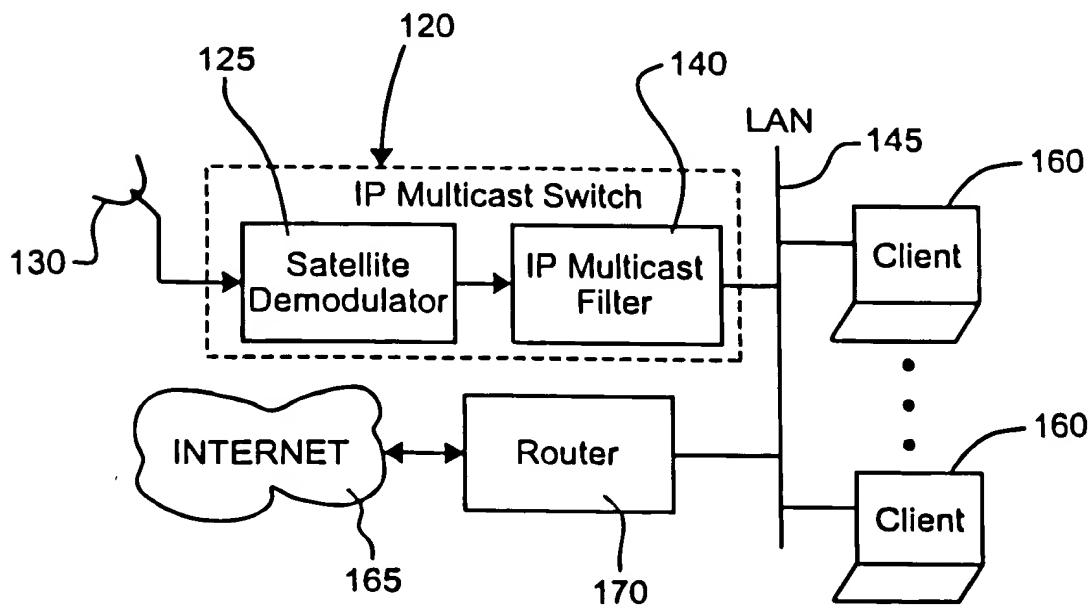
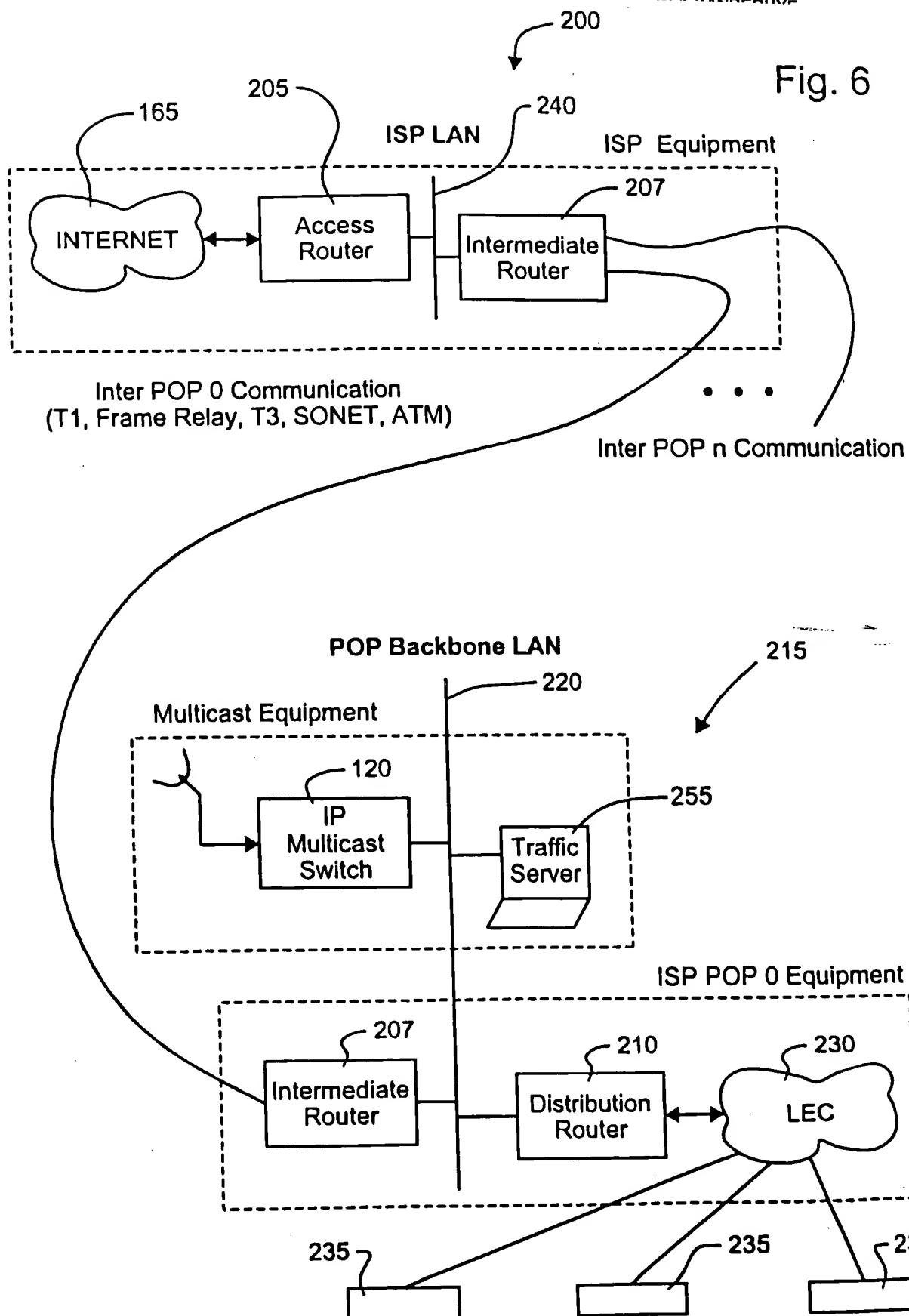


Fig. 5



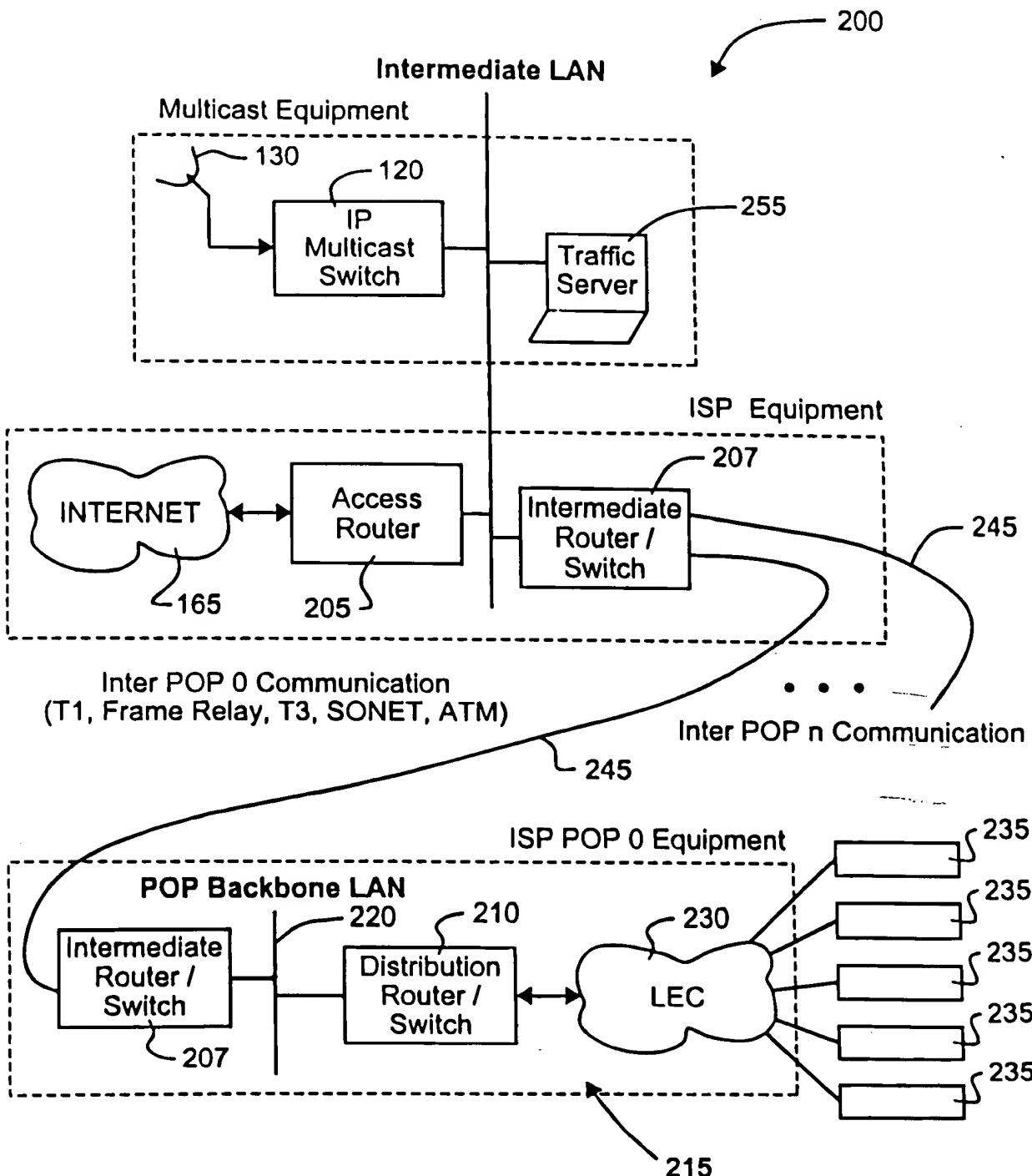


Fig. 7

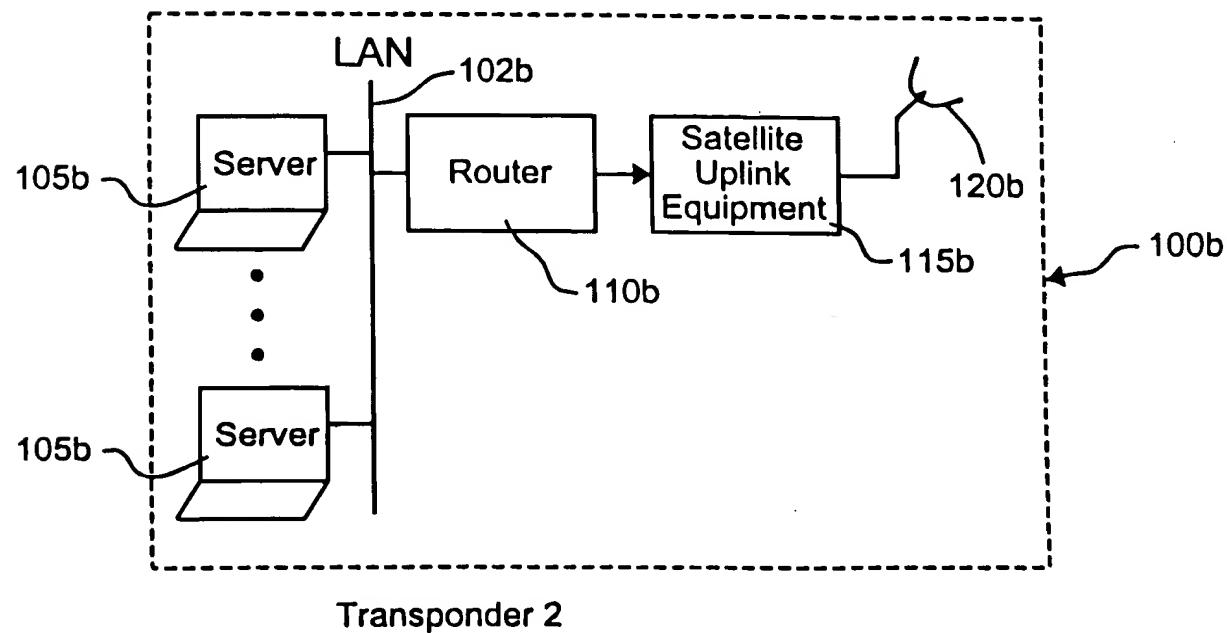
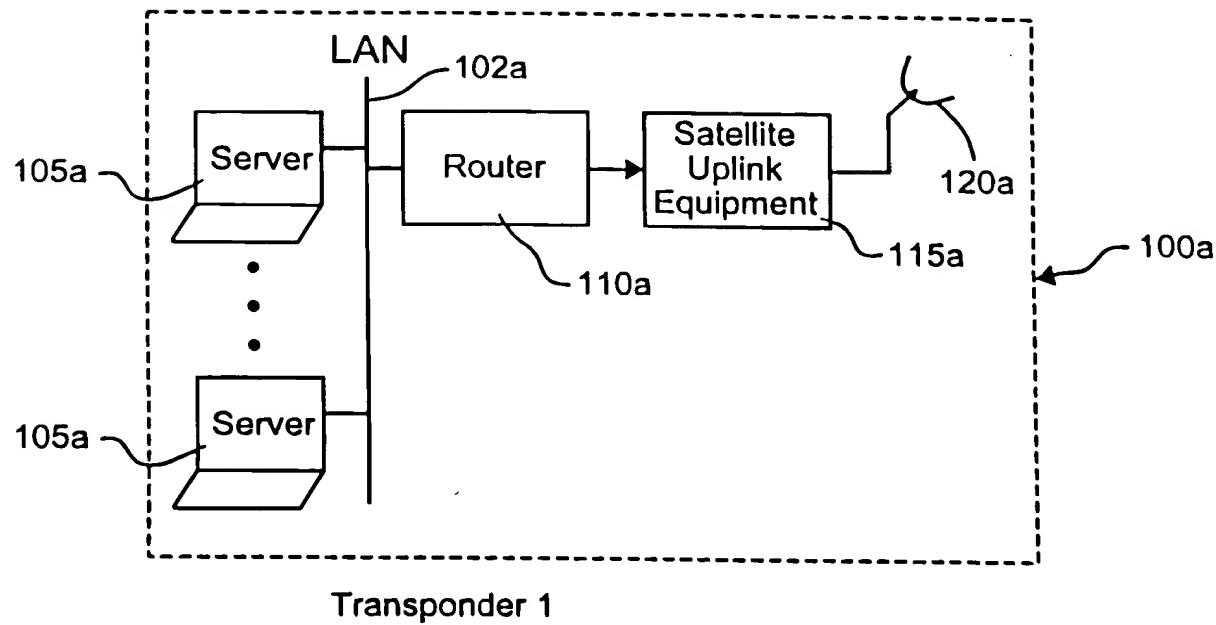


Fig. 8a

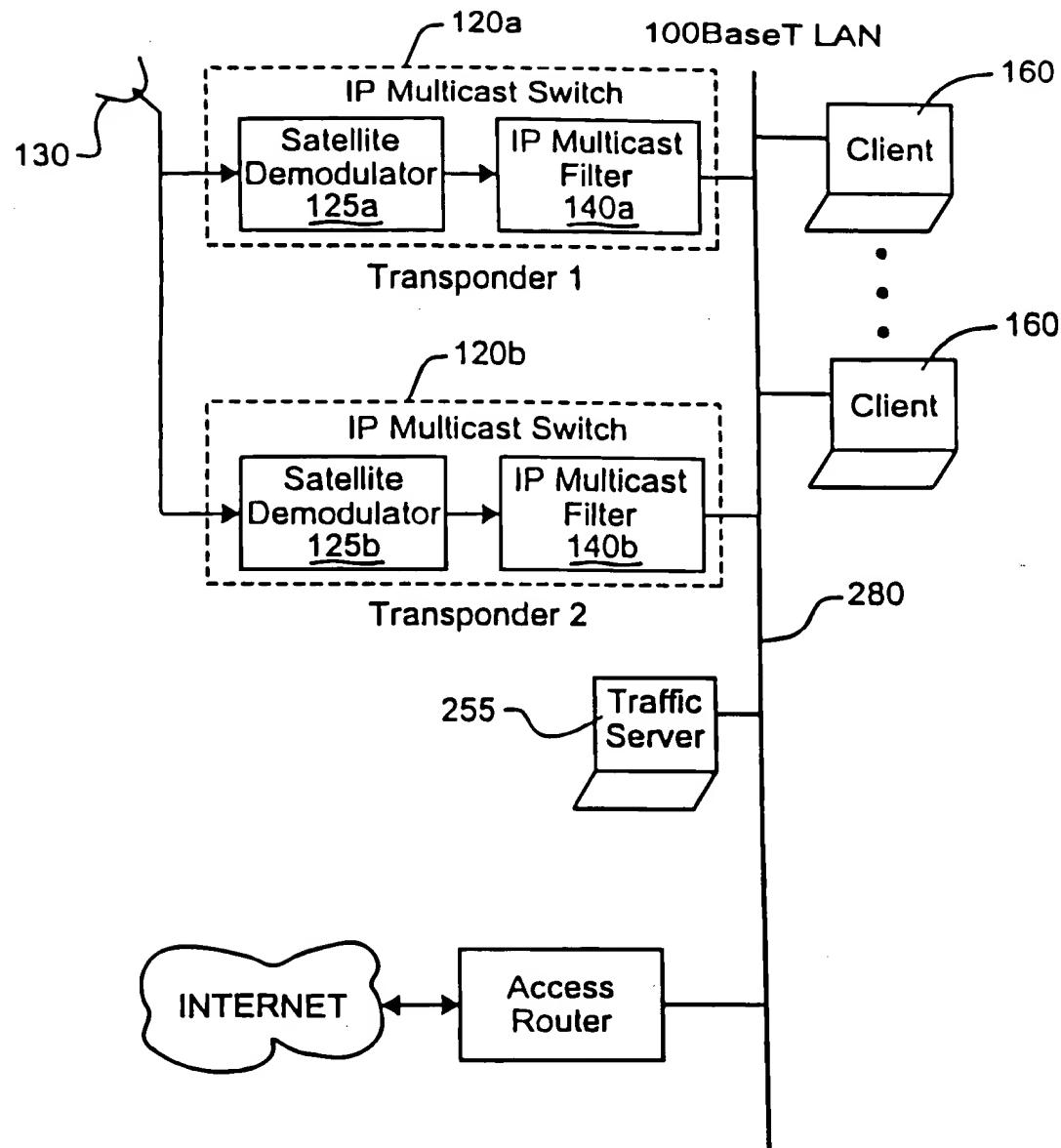


Fig. 8b

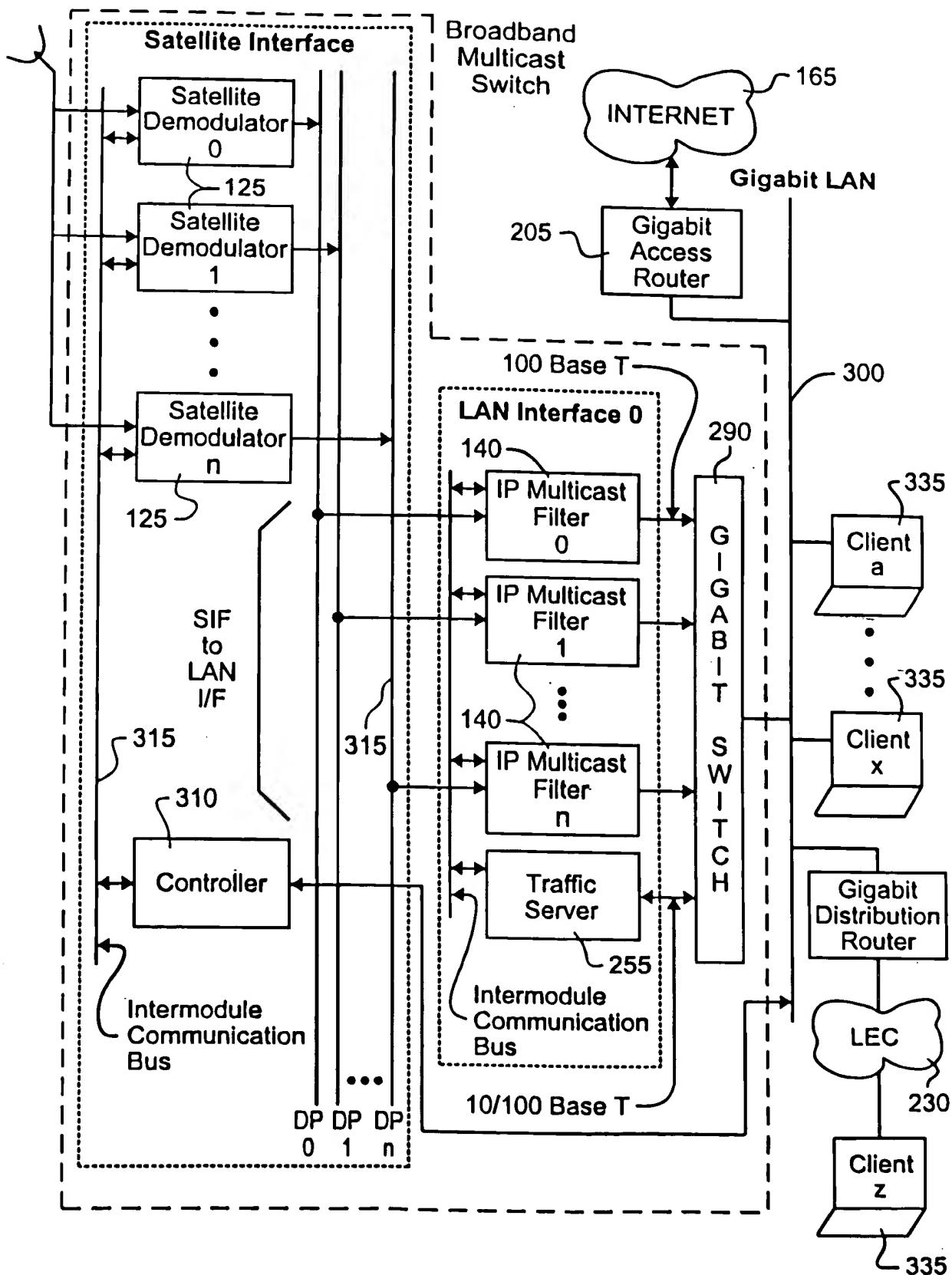


Fig. 9

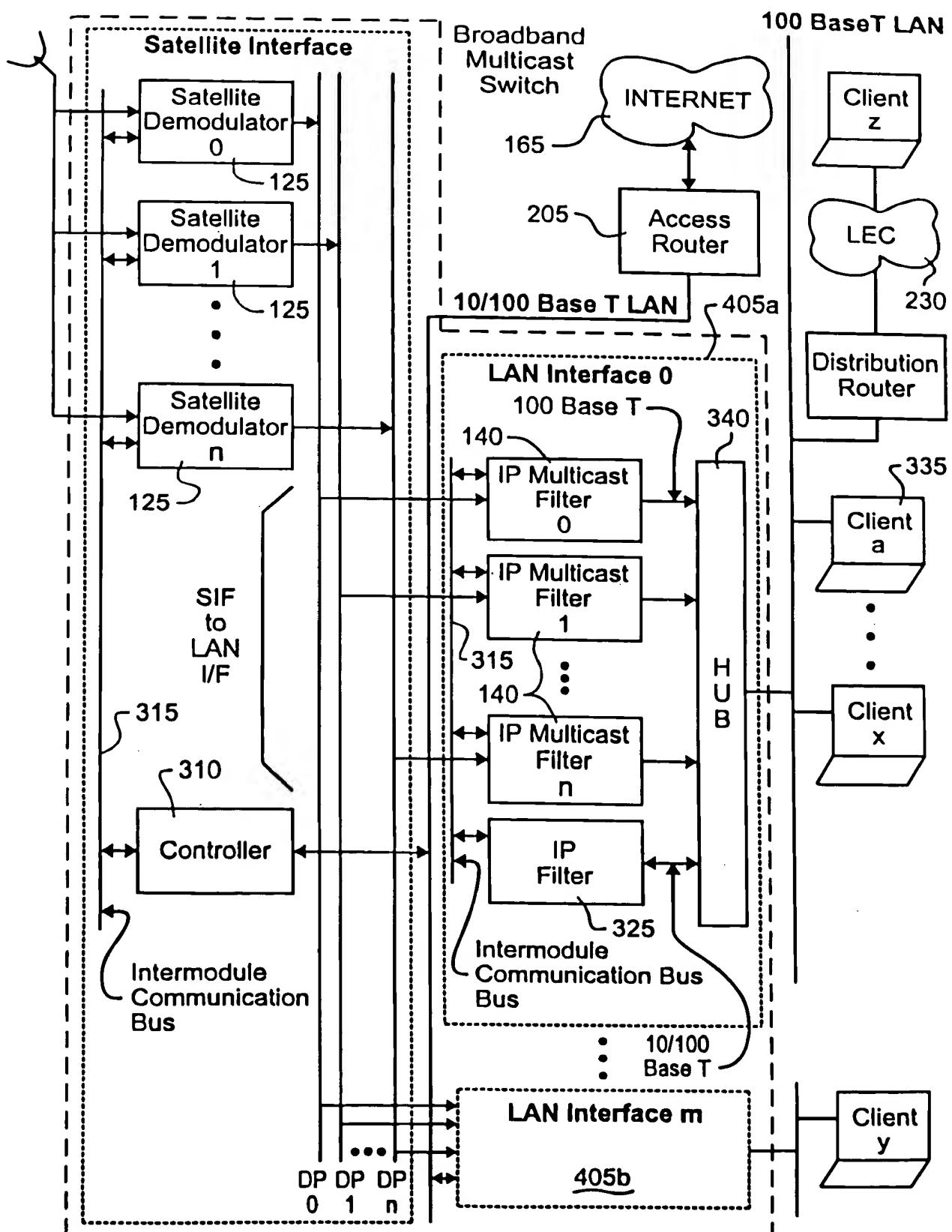


Fig. 10

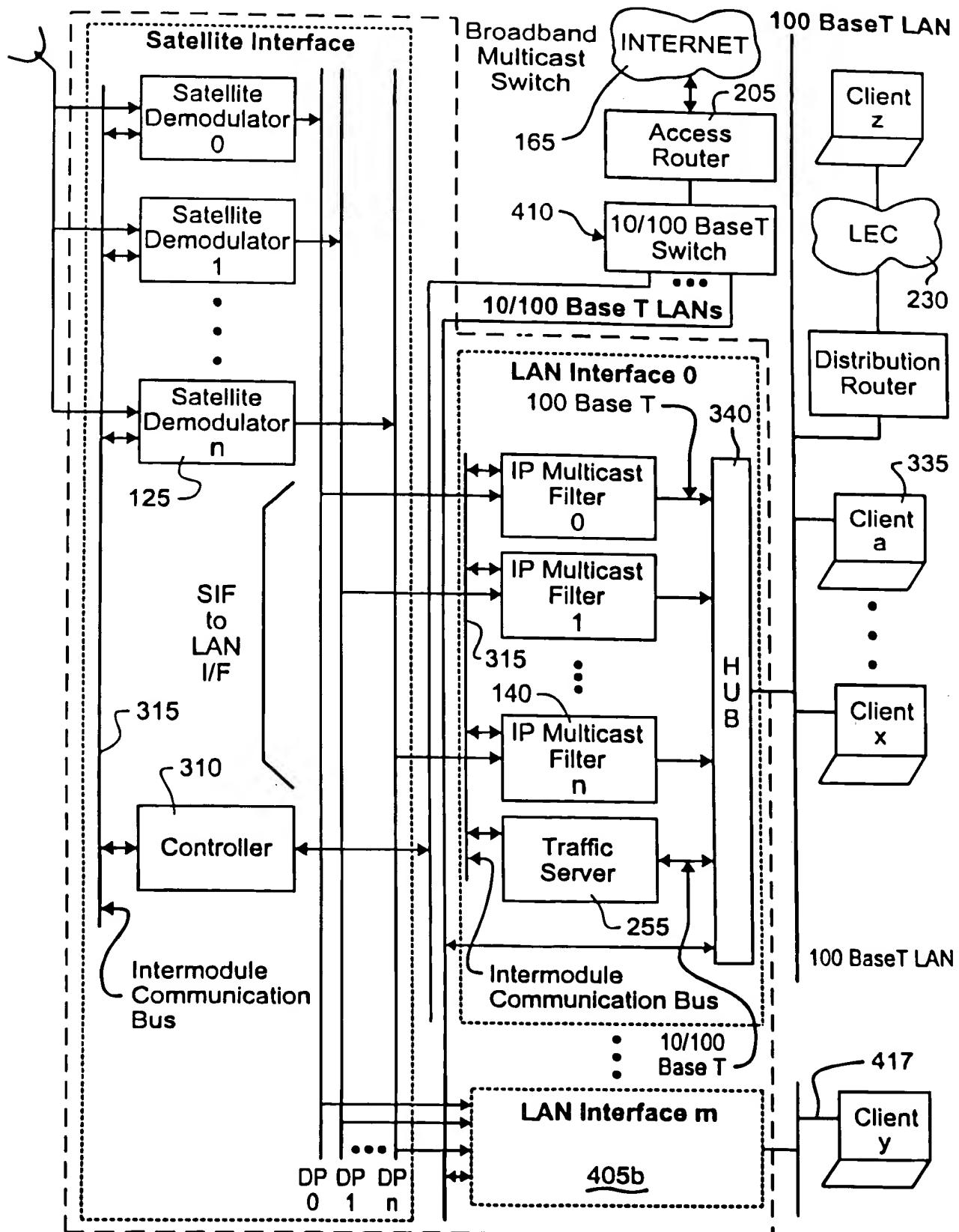
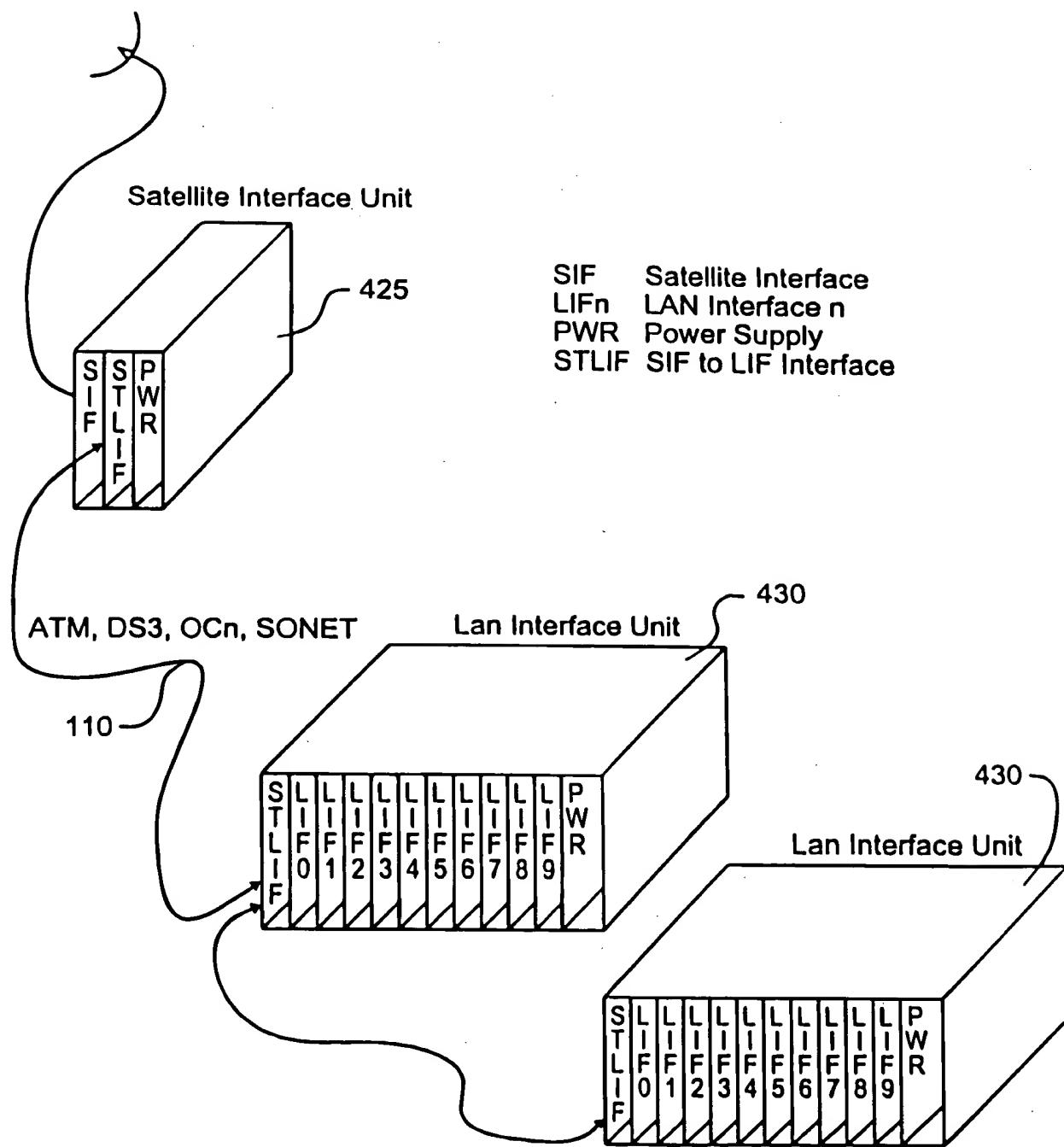


Fig. 11

Fig. 12



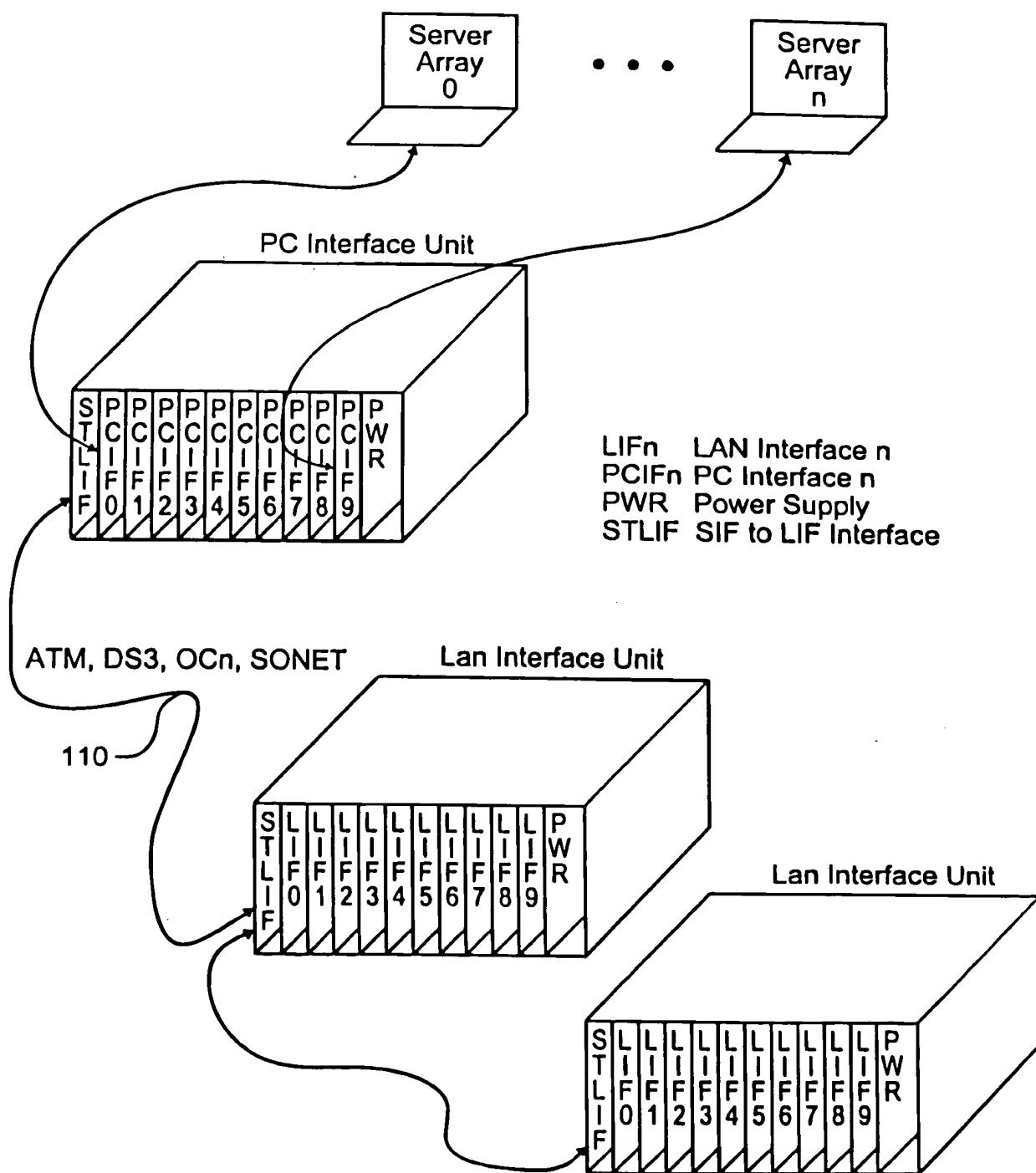


Fig. 13

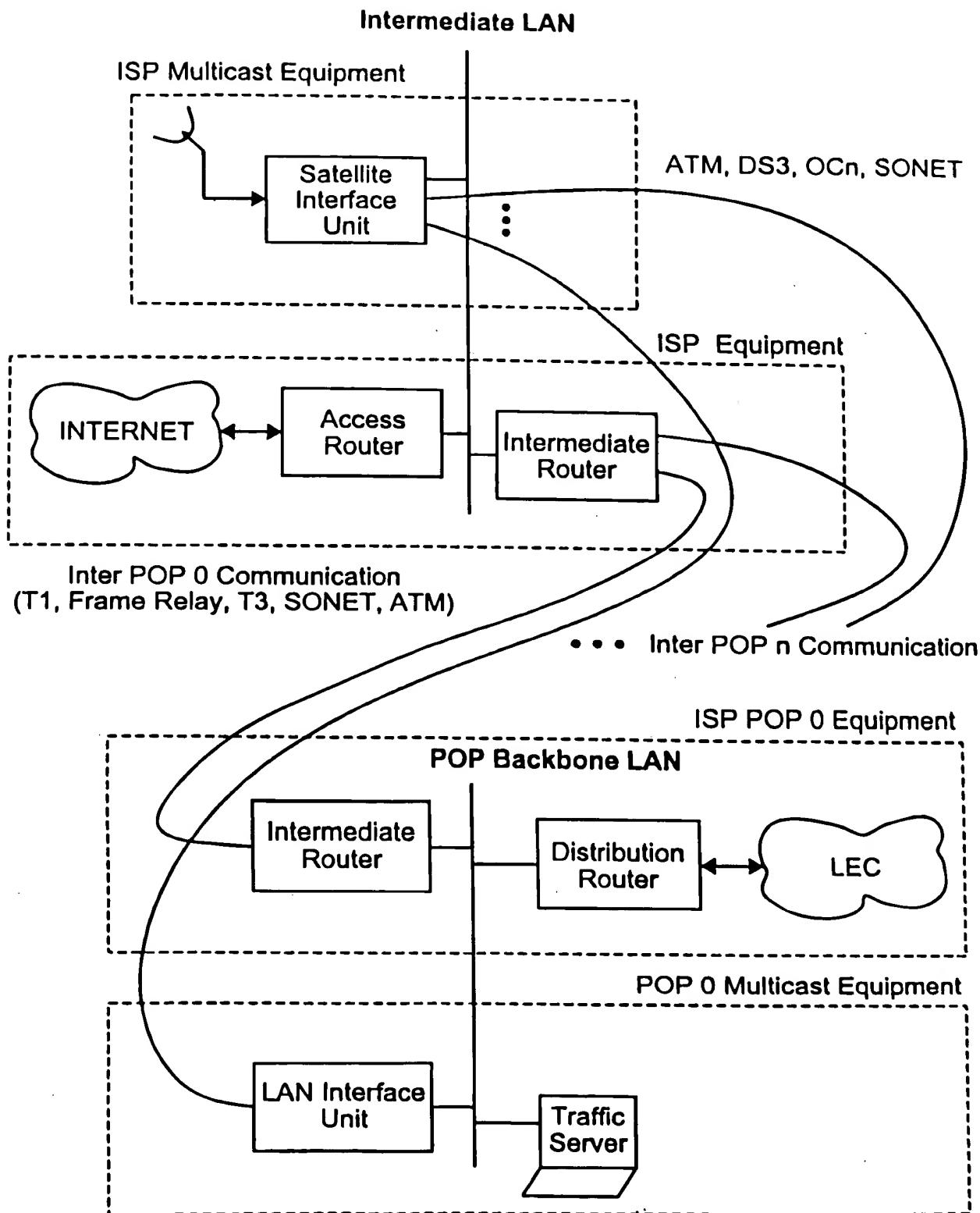


Fig. 14A

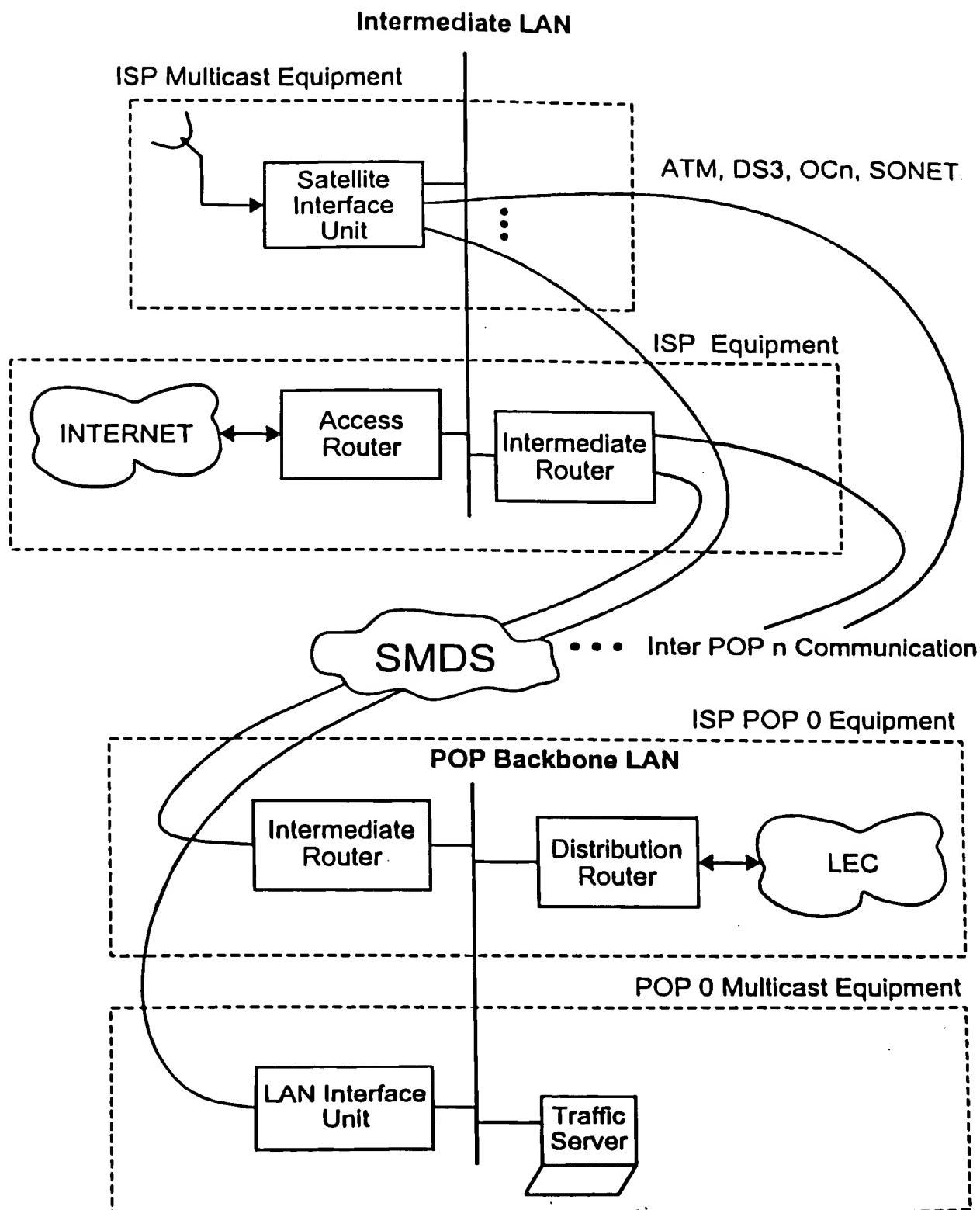


Fig. 14B

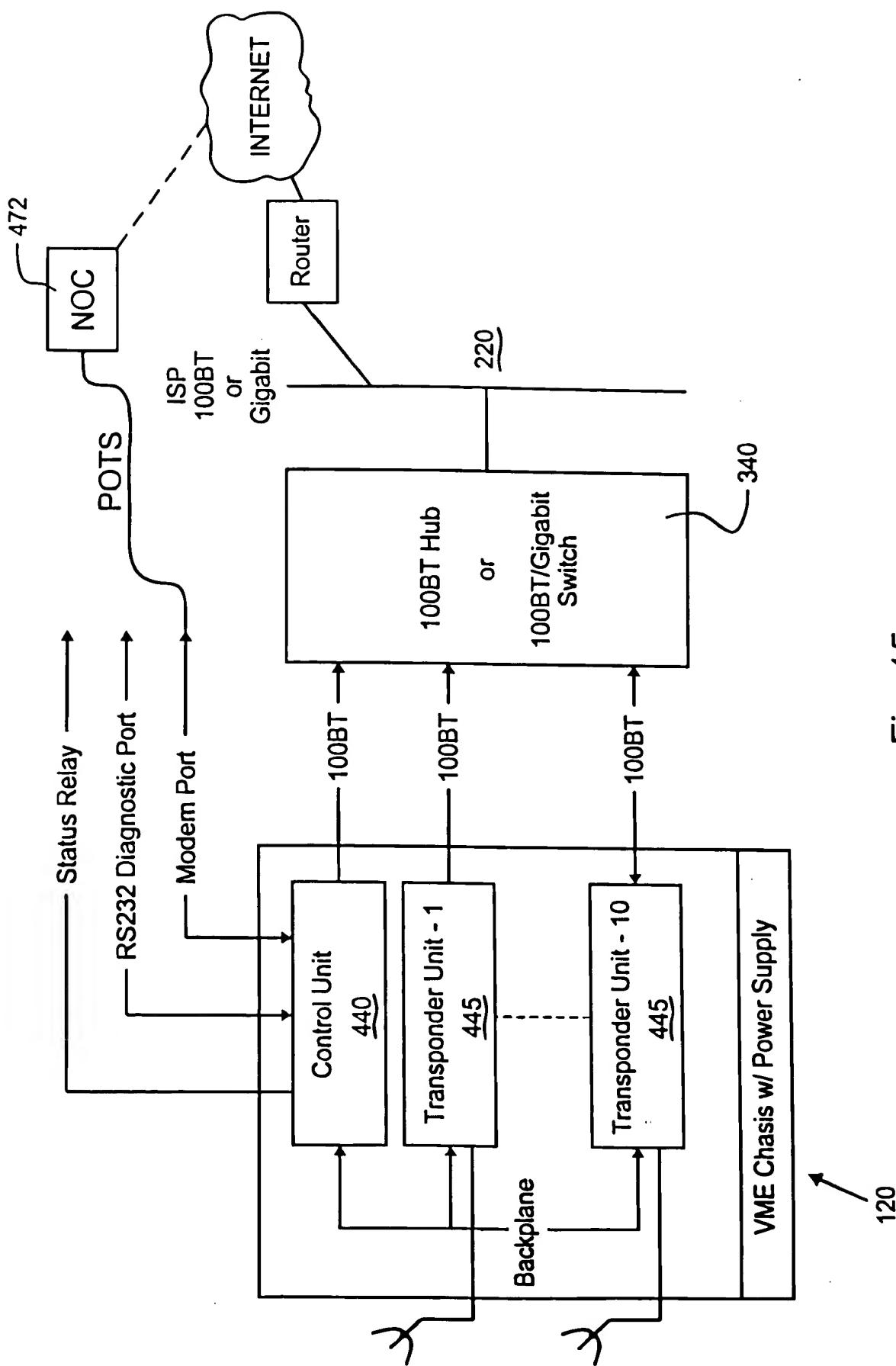
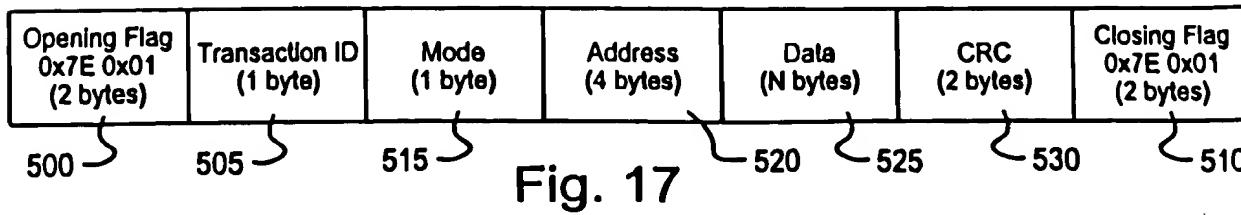
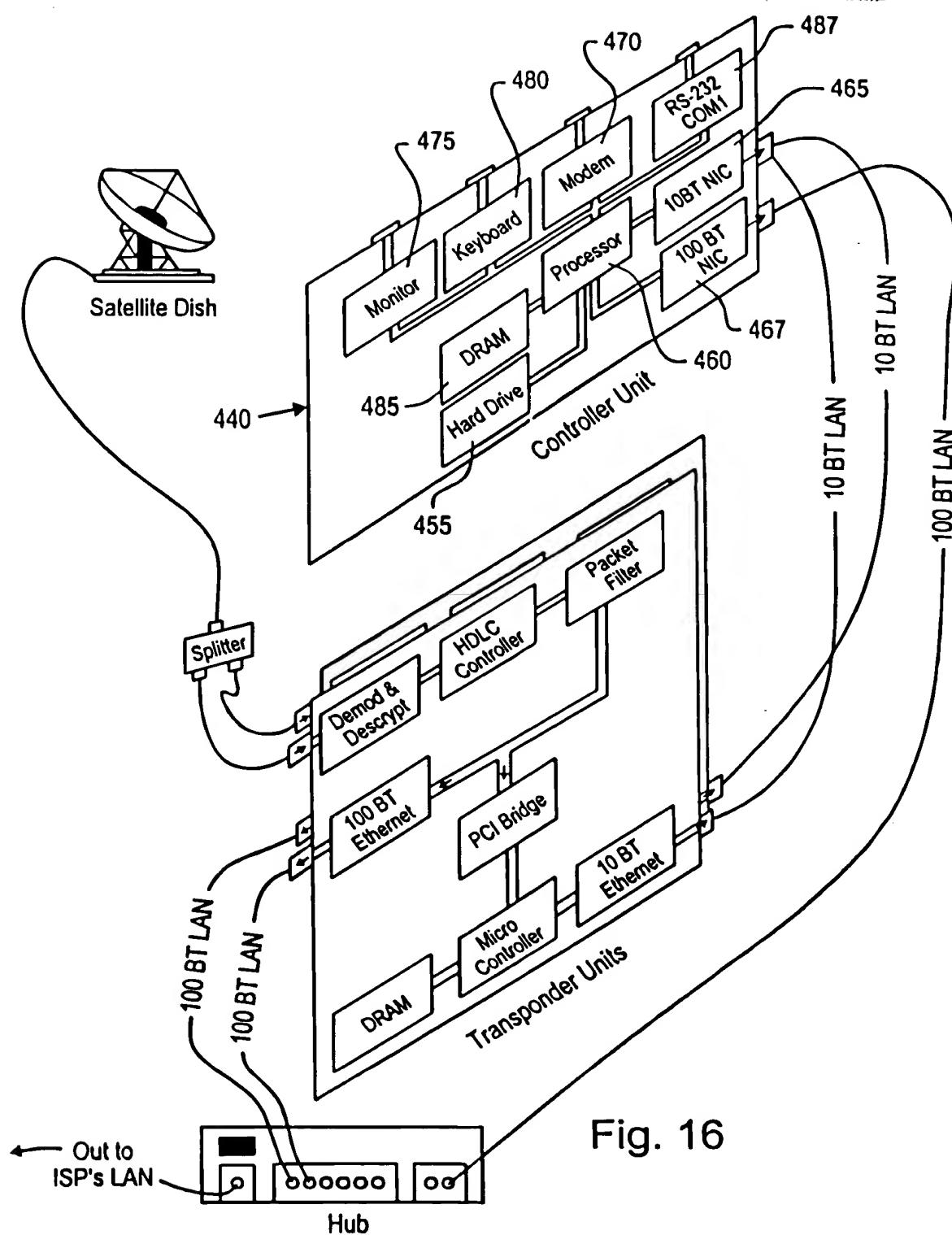


Fig. 15



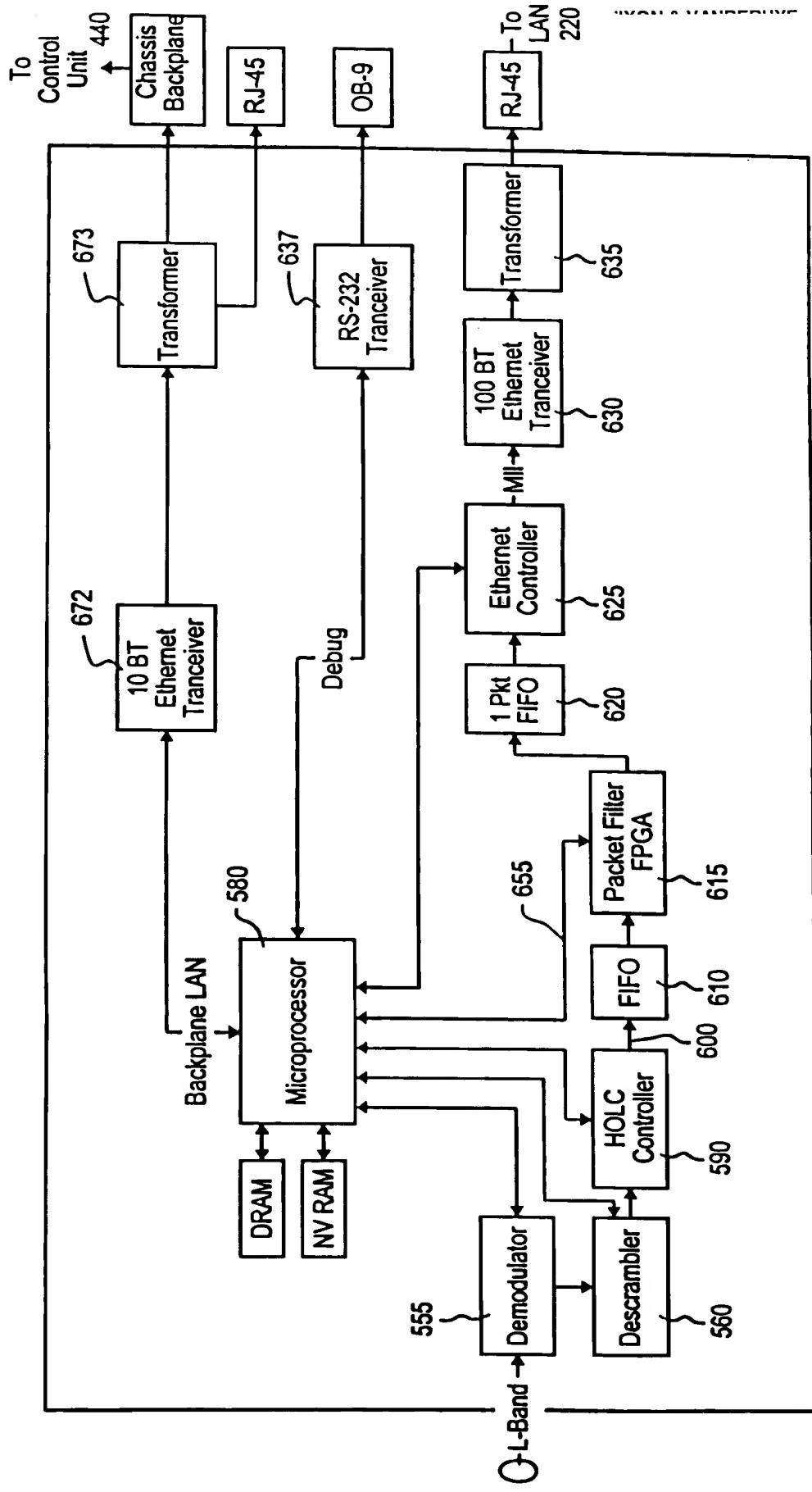


Fig. 18

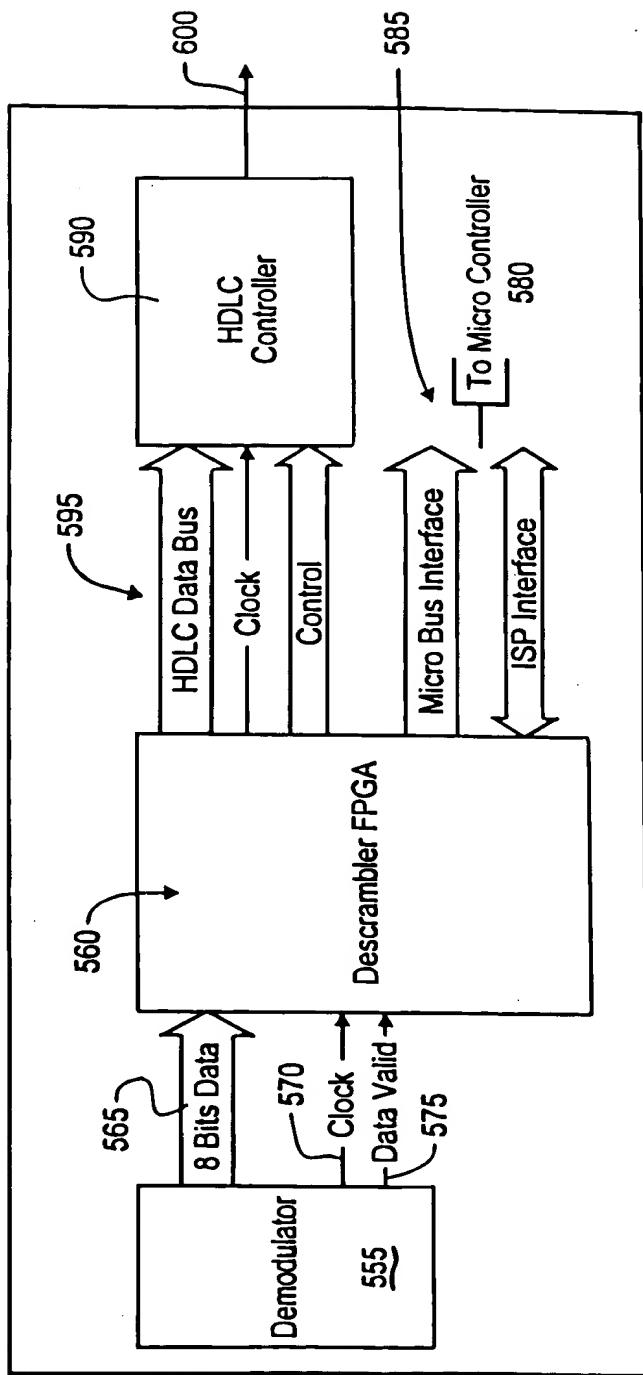


Fig. 19

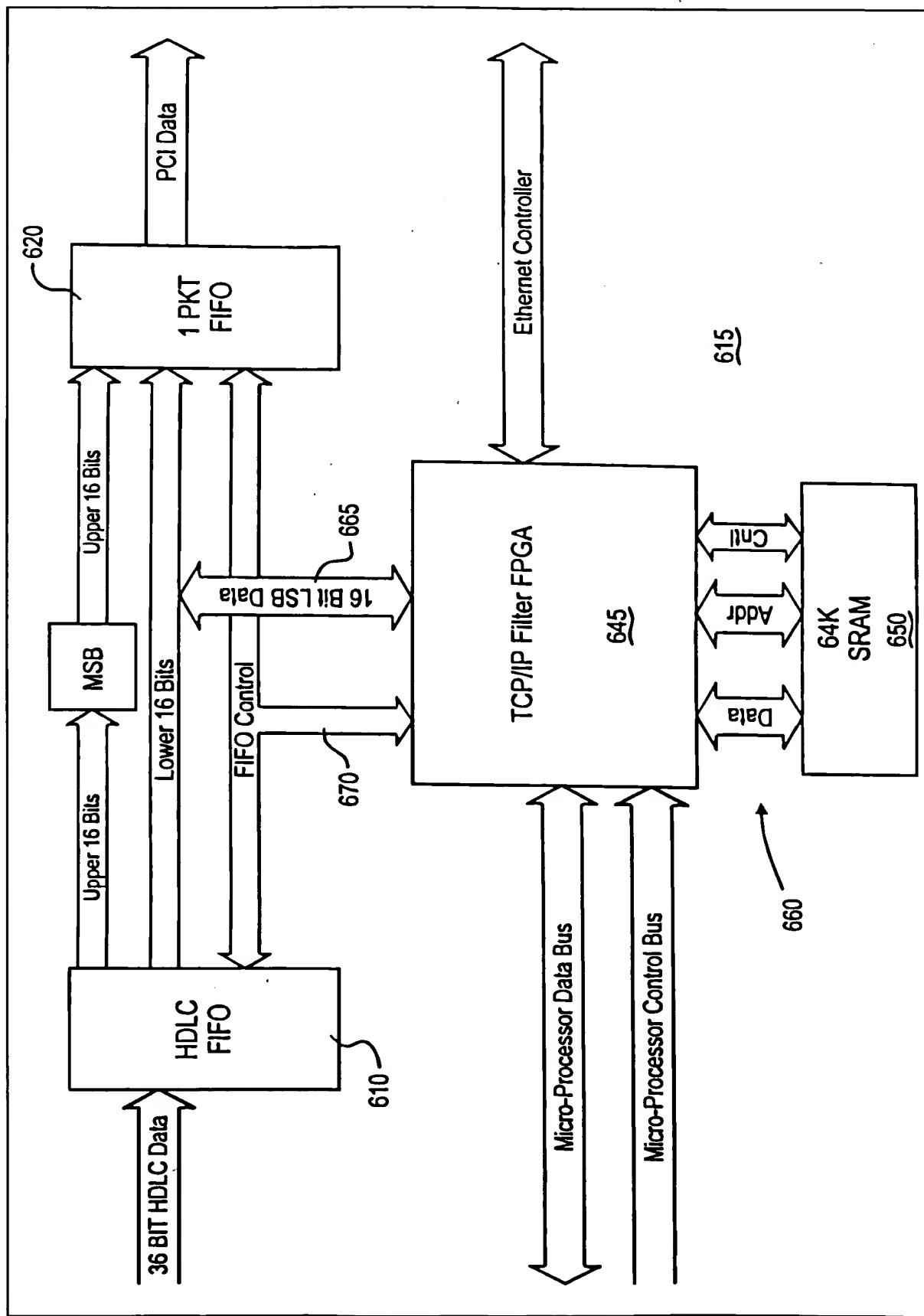


Fig. 20